

THE MINING AND METALLURGICAL JOURNAL

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VOL. XVII., No. 9

LOS ANGELES, CAL., AUGUST 1, 1897

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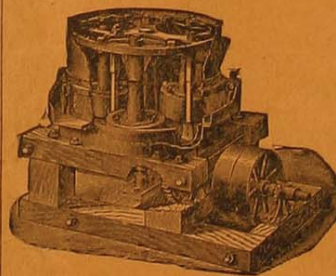
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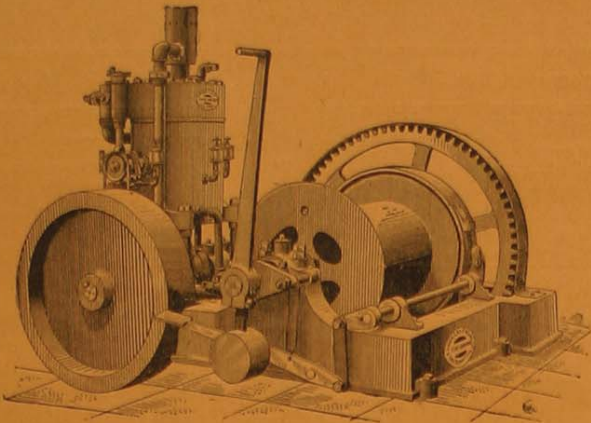
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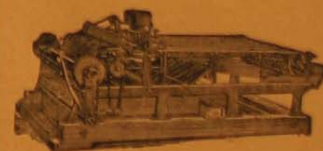
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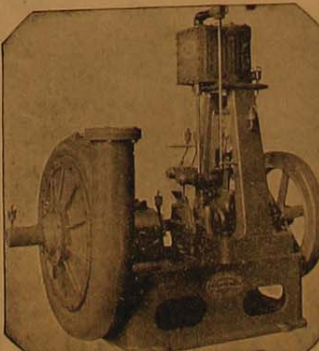
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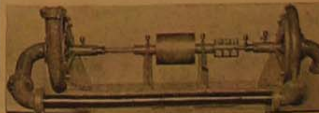
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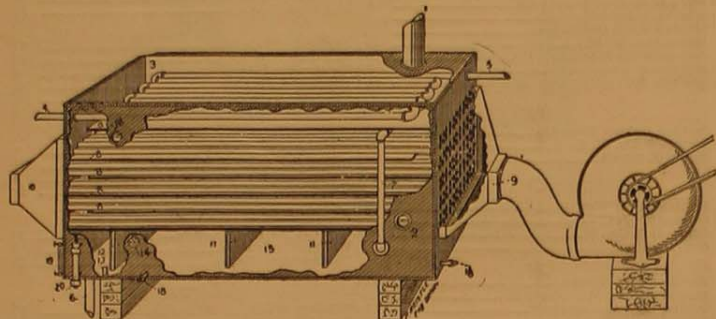
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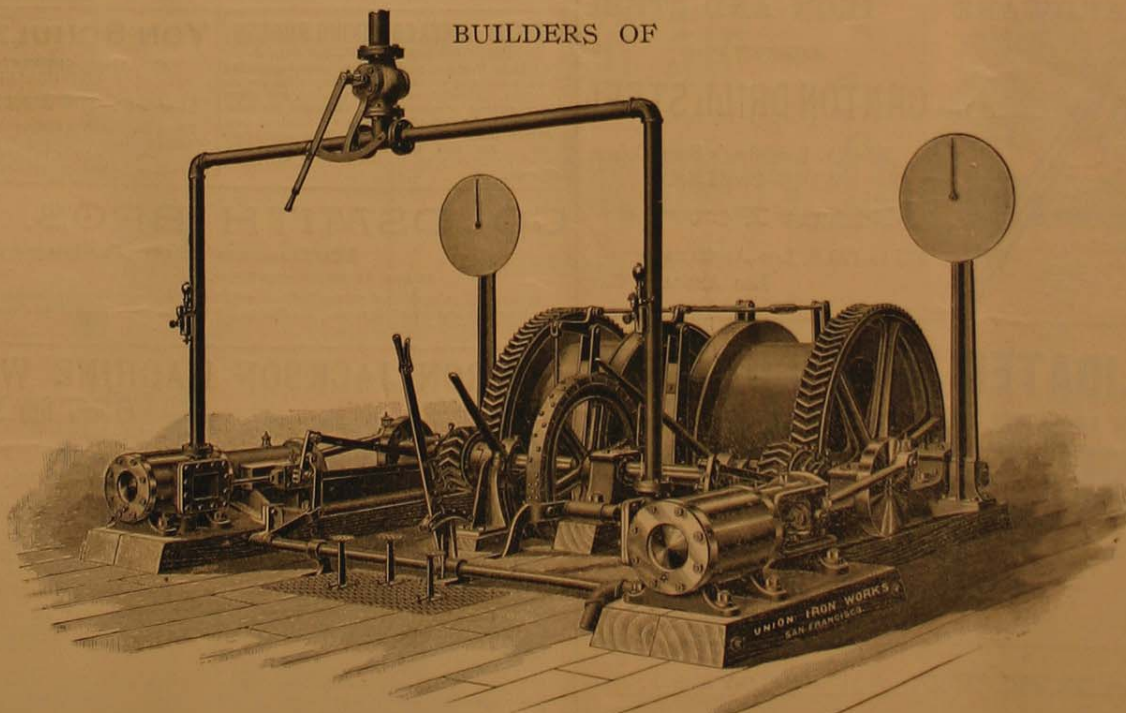
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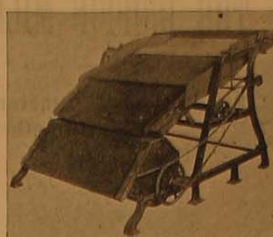
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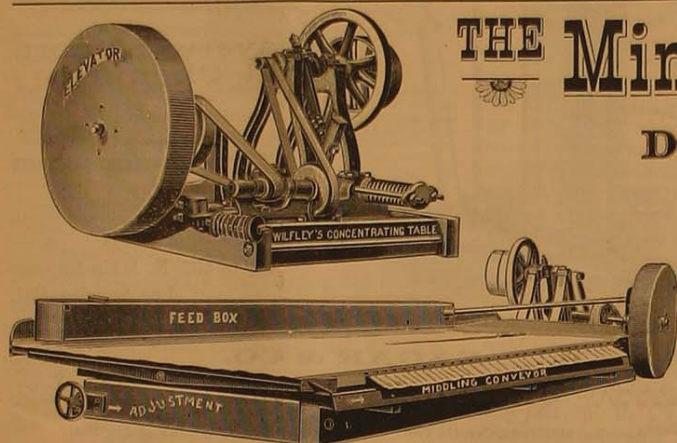
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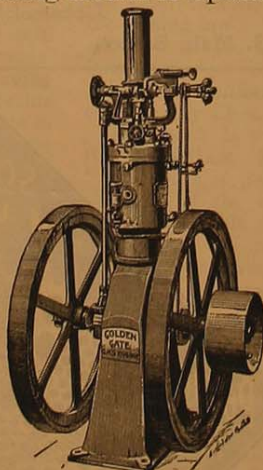
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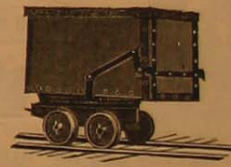
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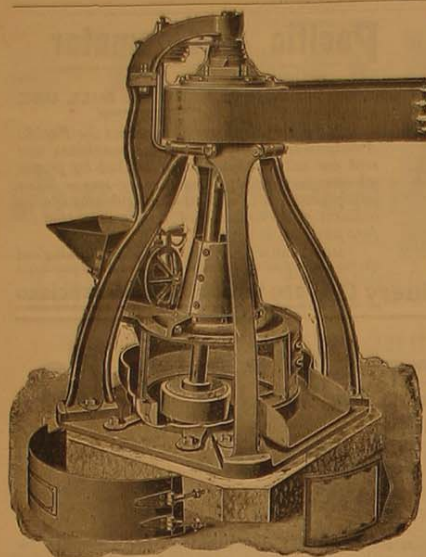
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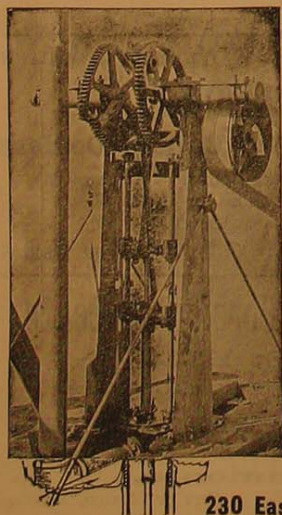
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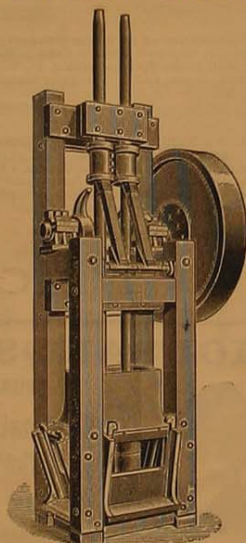
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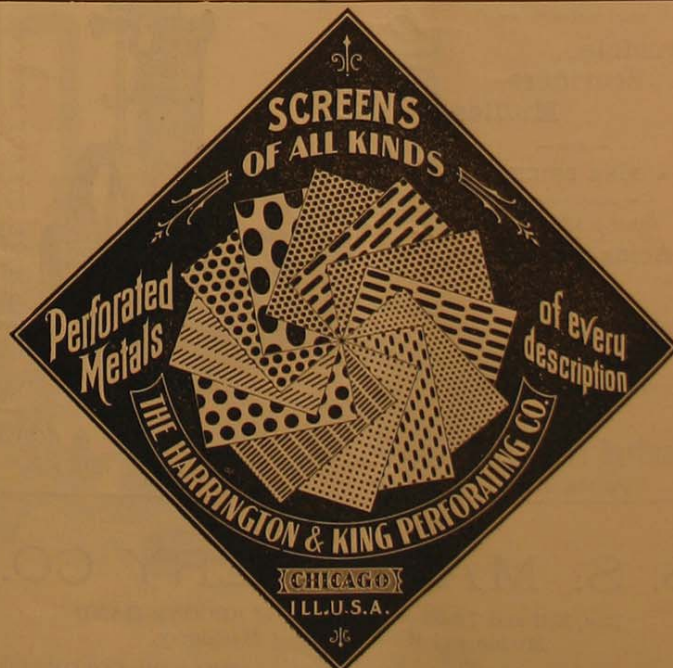
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CORRESPONDENCE

CALIFORNIA.

SONORA, CAL., July 20, '97.

Messrs. Crandall and Dull have secured control of the Golconda group of mines, and will shortly begin operations on a large scale.

The Rawhide continues to work up 100 tons of good ore from the stopes between the 10 and 8, and the main shaft is being pushed on toward the 1200 level.

In the Consuela, the old time big producer of the east belt, that has recently been reopened, drifting and cross cutting goes on every shift. The ledge is big and a strike of rich ore is reported.

Gus Ogden has bonded the well-known Providence mine to a rich syndicate, composed of San Francisco people, for a sum running way up in the thousands. The new company propose to operate the property on an extensive scale, and have retained Mr. Ogden as superintendent.

At the Shawmut mine, near Jacksonville, the ten stamps recently put in operation are dropping on a high quality of pay ore. Last week the mine was lighted by electricity for the first time.

The old abandoned Green mine, in the vicinity of Confidence is being reopened.

At the Tarantula mine the tunnel is now in 225 feet. At a depth of 150 feet cross-cutting is going on. The character of the ore taken out is exceedingly encouraging.

EAST BELT.

The Continental mine is located on the south fork of Stanislaus river. The owners have a 4-foot vein, shows free gold in the rock, pays general average of \$8 a ton. There are three tunnels and one shaft. A 10-stamp mill is just ready to start up.

The River-side, west of the above mine, is being actively opened up. They have several long tunnels. They have a 10-stamp mill—will add 20 more. Their vein is large, contains some high grade ore, average value \$7 to \$10 per ton.

The Lost Fox group of mines report their eight-foot vein in main tunnel looking fine. The rock prospect is in free gold, \$10 per ton. Owners propose in near future to erect a 40-stamp mill. These are the most easterly known mines in the belt. The prospects for a great paying property is assured.

The Old Easton Mine. The owners, Thos. and John West, have just struck exceedingly rich rock under the slide. The ore they have been extracting has paid all expenses of running. If the rich rock continues, dividends will be in order.

The Ketz Mine report rich rock in sight. They employ a large number of miners.

The Junction Mine. This mine is situated in the Soulsby district, is an extension south of the famous Black Oak. The superintendent has just encountered rich rock in their shaft. This latest find is very important—proving the Black Oak vein continues south, and carrying as great values as found north.

The Belle View mine. The vein at the 800 shows great improvement in value. The 10-stamp mill is crushing steadily day and night with profitable results.

The Providence Mine. This fine property is turning out some very fine rock. The developments are being actively extended everywhere. The prospects are most flattering.

The Grizzly. This mine is rapidly sinking their main shaft. When developed by levels and the ore shoots opened up, will be a very productive property—judging from the work that was formerly done on it. As rich rock in the early days was taken from the old works as could be found. The shoot was lost, owing to the want of proper mining knowledge, having been passed through in sinking their old shaft. It pitched to the north, away from the shaft, and was not followed as it should have been.

Limestone or Pocket Belt. A pocket of gold was found, and about \$37,000 to \$40,000 already extracted. Gold shows all over the vein that is left standing—depth 120 feet from surface. It is probable that from \$150,000 to \$200,000 will be taken out before same is exhausted. This strike was made on the old Tanzey claim, on the Bonanza vein—being northeast of that celebrated mine and almost within the city limits. Capt. Colby, the finder and lessee, is an old practical miner who has at different times taken out fortunes on the same vein in other claims. This find is *not* on the *mother* lode, as all the papers have quoted, such statements, being *false*, should be exposed.

ARGUS.

LETCHER, FRESNO COUNTY, CALIF.,
July 25, 1897.

EDITOR JOURNAL:—The following mining notes may be of interest to your readers: The final payment was made on the Copper King last week. It is considered a great property. During the last six months' prospecting, about 2,000 tons of pay ore was extracted from this mine. There is in the bottom of the 100 foot shaft 21 feet of ore. The owners propose erecting a smelter upon the property in the near future. Two 25 H. P. gasoline engines will be erected upon the property, and a Cornish pump put in. A three-compartment shaft will be sunk on the dip of the lode. A new boarding house is being built and a large force of men are to be put on. There were several new claims recorded recently in this vicinity, and among

the most prominent were the Grafton, Londonderry, Barclay and Prince Patrick. The owners expect to develop these claims in the near future.

This district has not been prospected very much, but there is promise of there being a great camp hereabouts. I expect to send you considerable news from this camp, but at present there is nothing startling to relate.

Yours,

OLD FRIEND.

MEXICO

TOPIA, DURANGO, MEX., July 16, '97.

EDITOR JOURNAL:—By the way the silver mines are being pushed ahead here, the value of silver is taken into very little account. The mint pay about \$1.10 an ounce fine. Wages are the same, which is less than 75c. in gold to miners and 50c. to peons; the small increase in price of mining material is not felt.

The Gurney Mining and Milling Co. are steadily getting to the front, under the able management of their new manager, Mr. C. L. Baker, who thoroughly understands his business, besides being a first class mechanical engineer. Two 100 H. P. compressors are now on the ground, besides four new sets of rolls, which is supposed to do away with the present arrastras, although the latter are good grinders, averaging each one 6 to 8 tons, 30 mesh screen, in 24 hours; the cost of repairing, about \$70 every three months, is the only drawback.

The Company have now stored away at the mines over \$100,000 in export ore, which, from the scarcity of packers, cannot be shipped. If it be true that the Southern Pacific have bought the Culiacan R. R., and will extend it to Durango, they have no way of getting there except by passing through Topia, which will not only benefit the Gurney Mining and Milling Company, but all the numerous mines in the vicinity.

The Santa Ranas mines, which have been big producers in the past, are now closed down, \$200,000 in debt, through bad management.

The new gold district of San Fernando, recently purchased by Mr. Mills for London capitalists, is rapidly improving—fabulous reports of rich discoveries being constantly talked of. After the rainy season, a two-hundred stamp mill will be put up. The same Company own the San Jose de Gracia mines, producing close on \$40,000 a month.

Next year, the State of Sinaloa will produce more gold in one month than it did five years ago in one year.

J. M. E.

MEXICO CITY, July 16, '97.

EDITOR JOURNAL:—The San Juan Mining Company, of Sultepec, in the State of Mexico, have just blown in their 120 ton stack furnace, for the production of copper matte. This company owns 63 mining claims. The ore that is now being taken out runs 17 ozs. silver, about 2 per cent copper and \$2.00 gold per ton, which when smelted produces a matte containing from 25 to 30 per cent copper, 200 ozs. silver, and from 1 to 2 ozs. gold per ton. This product is at present being sold to the Lewis Company, ore buyers, who have an agency in that camp.

The Malacate Mining and Smelting Company, of the same camp, have recently changed their production from lead bars to lead matte, carrying some copper. The change has proven beneficial, and the output has been increased very materially.

The Santa Gertrudis and Vera Cruz mines, of which Francis Jacot is owner, are now shipping a carload per week of desirable lead ore, running 40 per cent lead, and of an average value of 35 ozs. silver per ton.

The Alejo mine, belonging to Francisco Rodriguez is producing about 5 tons per week of high grade ore, running 350 ozs. silver per ton. This is considered the best property in the camp of Sultepec, and, if worked to its proper capacity, would yield at least 3 tons per day of ore of above grade.

The Hacienda of the Concepcion Mining and Smelting Company has now two small German furnaces running, making pig lead, which is refined at the Hacienda. Their output is about 500 ounces silver per week.

At San Nicolas del Oro camp, in the State of Guerrero, there is considerable activity, and a great deal of American and foreign capital is interested in a number of mines, which promise to become very notable producers. The ore is a high grade oxidized gold ore, running from 5 to 12 ozs. per ton, with a small value of silver.

The present mode of treatment is by a small 5-stamp custom mill, which is insufficient for the needs of the camp, and which in the near future will become useless, as the mines are gradually coming into sulphides, which require a different method of treatment.

Upon completion of the Cuarnavaca R. R., this camp will become a large producer, as the road will run within a few miles of it.

Mr. Gus Elfstrom, who has been running a concentrating plant at Tasco, State of Guerrero, for Noriega Bros., is at present in this city. He reports great activity in this camp, where nearly all the ores are concentrated and shipped to the smelters or sold to ore-buying agencies on the ground. He states that the mines of Noriega Bros. have sufficient ore in sight to keep their 50-ton plant in operation for 20 years. The value of this ore actually blocked out having been recently estimated by a mining engineer to be upwards of seven million dollars.

The famous Alacran mine of Zacualpan continues shipping high grade ore worth \$1000 per ton, to the Lewis Company agency at Toluca. An English syndicate is figuring on the purchase of this property, but the contracting parties have not as yet been able to agree upon the price to be paid for the mine.

SPECIAL.

UTAH

SAT LAKE CITY, July 23, '97.

EDITOR JOURNAL:—A change in the management of the Ajax is very likely to occur within the next thirty days, one of the heavy holdings, that of Ryan and Nebeker, having just changed hands. Awaiting this prospective change, but little work is being done at the properties. Investors will probably look with more favor upon the stock should the management get into new hands, as all differences would then be settled. Already a better feeling has occurred in the stock.

Anchor continues inactive. Somewhat increased inquiry for Bullion-Beck, evidently in anticipation of an early resumption of dividends caused the stock to strengthen materially. The mines are looking and doing quite well. From the president of the company assurances of a dividend in August have been received, but it is sometimes best to await formal action by the board. Buckeye is prosecuting development work, but the stock continues inactive and weak.

Very little business, in fact, practically none, was done in Centennial-Eureka. No sellers came into the market. Work progresses at the Chloride Point, but no activity is being displayed by the stock. Daly lost some of its recently gained strength, probably through fears of labor trouble, coincident with the cut in wages. Both the Daly and Ontario miners have agreed to the reduction, however, and there will be no trouble. Daly-West was not active, there being no special incentive to business in the stock. Dexter is reported to be looking well and the stock is somewhat stronger. Only limited business was done in Dalton and quotations changed but little.

Eagle was not specially active, but holders were firm for the old figures; while East Golden Gate found no takers. Geyser-Marion will pay its usual dividend on the 30th. The stock was active but at stationary figures. There being a fairly steady demand for Galena, the price kept up well. Little Pittsburg was stronger. Horn Silver is doing well.

Mercur has paid its July dividend, and the stock sold up to and even above the \$8 mark, closing strong and in fair demand. While the stock did not change materially, Mammoth held firm and was in some demand. Holders have evidently determined to play a waiting game. The mill is working to full capacity. Northern Light was somewhat shaded. The mines are looking extremely well and the mill continues to do good work. Its new capacity should soon be completed. Ontario also lost some of its strength, but the labor troubles having been settled, a reaction should come at once; although, for some reason not given, the July dividend is being delayed. At local headquarters no opinion is expressed as to the delay. Omaha was not active and prices remained unchanged. This stock is looked upon with much favor as a long hold.

Rover had some nice ore developments. With the resumption of operations, Sunbeam advanced sharply. South Swansea has paid its July dividend. The stock was strong, as was also Swansea. Both companies are doing well. Sacramento did some business at last week's figures. A little inquiry for Silver King developed the fact that only a very limited amount of the stock is offered. Utah was not active, but prices remained unchanged. Very truly yours,

JAMES A. POLLOCK.

Miscellaneous Mining News.

ARIZONA

There is some talk of a \$250,000 smelter to be erected in Phoenix, Arizona. Three companies are already in the field—one from New York, one from New Jersey and another from Colorado.

Wm. Sweeny has located several large gold bearing ledges on the east side of the Wallapai peaks, in Mohave county, and will in a few days start work on them. One half ounce in gold is the lowest assay had on the ore.

The Holmes copper claims, bonded by Messrs. Clark and Hoyt, of Los Angeles, is looking well and its promoters encouraged with the results. Some good looking specimens have come from this group.

The Copper King, of Arizona, at Bisbee, shipped 60 sacks of high grade ore to the Denver smelter, July 17th.

Word is received from the Santa Maria mine, near Phoenix, that machinery is being sent there, and that the force employed will soon be increased. The work of development only awaits the return of the manager, Mr. Clark, when it will be pushed to the utmost. It is good property in paying ore, and it will not be allowed to stand idle.

Supt. E. Randolph, Eugene S. Ives and R. J. Duncan have secured control of the King of Arizona mines, and a stock company has been organized with Mr. Randolph as president. These mines are known as the Gleason mines, situated about fifty miles north-east of Yuma.

The Swallow Mining Company, of Castle Creek are overhauling their mill at Briggs, and will start it up on a steady run. Mr. Gray, one of the owners is personally superintending the work and states that the outlook is very gratifying.

The Sun Dance Company, while prospecting for water, near the bed of the Hassayampa river, and close to their mines, last week struck a strong flow of water, at a depth of five feet from the surface. The water came in so rapidly that a steam jet, throwing at the rate of 50,000 gallons of water per day, failed to make any impression on it, or to lower it in the least. It is estimated that not less than 100,000 gallons per day can be obtained from it, which will give an ample supply to run the mill day and night, and have a surplus of thousands of gallons of water per day left.

Geo. H. Fitts returned to Tombstone, July 19th, from Pearce, where he went to look after the interests of the Gold Cliff, of which he is president. Mr. Fitts informs us that the Gold Cliff is looking better than ever, and arrangements are now being made for the regular shipment of ore to El Paso.

The work on the Gold Cliff heretofore has been in the nature of a development and stripping the big ledge. Large measured blocks of low grade ore, carrying from 25 to 35 ounces, and enough gold to pay working of same are in sight, which would yield handsomely if milled on the ground, and is to be kept for that purpose; but as there are also some rich streaks in the ledge, this will be taken out and shipped, and the mine placed on a paying basis. The building of a platform and necessary arrangements to facilitate the handling of the ore for shipment has been ordered. The Gold Cliff is a Los Angeles corporation, and the stockholders are now in a fair way to realize their expectations.—*Tombstone Prospector.*

In the Dragons, the machinery for the McCormick mines, upon which A. M. Wells and Denver associates have a bond, is now on the ground and being erected by machinists and carpenters.

Stephen Smith has bonded the Arrastra mine, in the Wallapai district, in Mohave county. The parties who have the bond are working and developing the property.

John Smithline is steadily working his Lucky Boy mine and taking out good ore.

It is understood the Middle March Co., another Los Angeles corporation, contemplate erecting a smelter on their copper property in the dragoons.

The Hall-Houston mill, on the Agua Fria, has just completed a run of thirteen tons of ore from a very promising claim in the Black Hills, near Ash Creek. The property is owned by Robert DeLarge, who has a shaft down forty feet, at the bottom of which the ledge shows a fine face, and from which the ore used in the recent run was taken. The returns far exceeded the expectations of the owner, and work on the prospect will be continued.

The Saginaw mill is running every day, and the company is working two shifts a day on the Dakota mine. They shipped a car load of ore last week, and have about 200 sacks of shipping ore and about ten tons of concentrated ore, which is all ready to ship. They are building roads all around the camp and a reservoir for tailings is now in course of erection. A store has been opened and the camp is beginning to assume an air of general activity.—*Citizen*.

There is considerable talk over the recent sale of four promising claims in Peeples' valley. The claims were the property of St. Clair and Wolloth of Yarnell and another gentleman by the name of Paul King, and are situated near the divide between Peeples' and Kirkland valleys, not far from the once famous Model mine, from which some of the richest free milling gold quartz ever shown has been taken. The price paid for the claims is \$20,000, and the purchaser is Dr. Underwood of San Francisco. Quite an amount of development work has been done, and it is believed that the new owner will spare no pains to bring these very promising claims to the front and place them on a paying basis. Should this occur, there are numerous other claims in that vicinity that will be opened up.

The *Prescott Courier* says: A. J. O'Connor, of the Bank of San Diego, a strong business man of San Diego, Cal., accompanied by Dr. Underwood, a few days ago inspected the Osborn group of copper claims and bonded them, paying \$1,000 cash down. The transaction was consummated last week. The properties are located twelve miles from Vulture in Maricopa county. The group comprises seven claims. There is a solid ledge of copper ore, five feet wide, which goes 30 per cent copper. One of the claims does not belong to the group proper, but is about one mile distant, and has a large body of high grade lead ore. Running parallel with the great copper vein of the group, and within the boundaries of the claim, is a wall-like ledge of iron ore, just suitable for fluxing purposes. In the same vicinity is an immense limestone dyke, fifteen feet wide.

The McCabe mine is the property of Judge Wells of Prescott, Hugh McCrum of San Francisco, the liquor dealer, and W. S. Parsons of Tombstone, owner of the Contention mine at that place. The property is under the superintendency of John J. Coleman, and is being developed for a large mine. Only the ore encountered in the development work is mined. This pays for the improvement work besides allowing a margin for dividends. The milling ores run from \$35 to \$40 per ton. The high grade ores are shipped to Pueblo,

Oxidized ores carrying free gold were found in the first 150 feet of work. At the present depth the ores are more refractory, and the amalgam plates catch but a small percentage of the values in the ores. The greatest values is in the concentrates.

The shaft is down over 500 feet. There are 8000 feet of drifts, and 2,500 feet covers the extent of the work in winzes and shafts. The plan of development is carried on without regard to the ore veins found in the course of its prosecution. It will be a mine proper when the plans are completed.

There is a ten-stamp mill in operation. A new eighty-horse power boiler was added recently.

The shaft runs at a pitch of seventy-five degrees from horizontal, and the vein is almost vertical with substantial walls. The vein matter varies in width from two to twenty-two feet. The pay roll contains the names of nearly 100 men, including the men employed in getting out wood for timbering.—*Phoenix Republican*.

CALIFORNIA.

AMADOR COUNTY.

F. W. Page, Esq., general manager of the Hexter, Emerson and other mines in the northern counties, has purchased for his company the Monte Cristo Quartz mine, located about 6 miles northwest from Volcano in Amador county. Development work has been progressing night and day under Thos. Dillon, Supt., and results in showing a sixty foot lead of porphyry mixed with quartz stringers, the whole mass paying by mill process from \$2.50 to 3.50 per ton. On the north end of the claim a pit some 70 feet deep shows the above described material. Some 600 feet further south a shaft 90 feet deep with drift and crosscut shows 60 feet of the same, and the working tunnel 750 feet on the ledge shows from 40 to 60 feet pay ore and the tunnel now has 300 feet vertical backs, 425 feet on the raise. An upraise to connect with drift at the bottom of the 90-foot shaft is now up 50 feet, all in good ore. A small 5-stamp mill has been pounding night and day for the past two years with results as above stated. The present company have just completed and started up a 6-foot Huntington mill, which will work this material better than stamps owing to the soft porphyry that it carries. Sixty tons per day will be treated.

KERN COUNTY.

Johannesburg Jots.

Fred Dexter has just finished a residence on his Geo. Cook mine which adjoins the town.

A contract has been let and work begun to sink a shaft on the White Wings which lies next to the town on the east.

G. W. Blodgett has bonded his Lucky Baldwin claim to Ermerins & Reynolds, who are now working on the same.

Capt. H. D. Colson's prospect work on the Camperdown is beginning to show good results. He is now sinking two shafts in ore.

It is very satisfactory to chronicle the fact that there are no idle men in Johannesburg, about fifty men being regularly employed in the mines adjoining the town.

G. M. Rose has purchased the interest of Frank McNally in the Monte Christo and Alameda No. 2 claims the other interest being

held by W. M. McEwen of the Alameda. Development work will be commenced on them immediately.

Since the installation of the new pumping plant in the Johannesburg Water company's wells there has been an abundant supply of the precious fluid on tap, which is being heavily drawn upon, as they are supplying most of the Rand district.

H. L. Hollis, a mining engineer of Chicago, has been here for the past two weeks looking over the district for investment. He has been favorably impressed with its prospects and has, with G. H. Curtiss, taken a bond on the Gold Bar and Right Hand Bower claims, owned by Perdue and Thurston. These claims join the Alameda on the east end and have a shaft down sixty feet which shows up a large body of ore of moderate value. They now have several men at work.—*Randsburg Miner*.

There are now about ten tons of coal on the dump at the coal mine at Garlock, the vein is growing thicker and the coal better as depth is attained.

The last fifty-six tons of ore from the Kinyon mine at Randsburg milled produced \$8,445.21, and the tailings, which assayed \$19 per ton, were sold for \$600, making a total of \$9,046.21.

The Little Butte No. 1 shaft at Randsburg is now down about 280 feet and the ore averages clear across the ledge, at the foot of the shaft, a little more than \$43 per ton.

George B. Kinyon & Sons shipped out from Randsburg thirty-eight and one-half pounds of gold bullion last week as a result of a recent run on ore from their mine. This makes the product of the mine \$15,000 for the month of June.

\$500 ore has been shipped from the Kinyon mine at Randsburg.

Frank H. Heald of Garlock, Cal., has recently sold his interest in the coal mines near that place for \$15,000 to eastern capitalists.

It is reliable reported that Thomas Hines, formerly of Kingman, Ariz., has struck it rich northeast of Mojave. He has struck a ledge of gold rock and it is worth millions.

LOS ANGELES COUNTY.

The Red Rover Mine.

At no time in the history of this mine has so much life been shown as at the present time. The mine is being more and more developed and lowered, the depth now being nearly 800 feet, and work on sinking down will not let up soon again, as the mine is getting better, the ledge more solid and more permanent as it goes down. The mill is run day and night now, without stopping. The pump in Acton is running day and night, and the puff, puff goes right on, and in this connection we wish to say that the underground work is progressing so well because the foreman, Mr. Schmal, is respected by his men, and knows his business. Mr. Gilbert the general superintendent, has more time now to look after the welfare of this valuable property over ground and he has more to look after than one man should. In general the Red Rover is the foremost mine of this part of the State.—*Acton Rooster*.

RIVERSIDE COUNTY.

Mr. Garret Bratt informs us that he received a letter from M. S. Yetter the first of the week in which he reports things progressing quite rapidly at the Golconda mines. The engine boiler has been placed in position and he says they will begin the pleasant operation of washing out gold in a few days.—*Hemet News*.

The coal indications become more favorable, as development progresses, on the ground between Moreno and San Jacinto, near the San Jacinto lake.

D. G. Mitchell, I. A. Witherspoon, A. B. McCormick and E. H. Gruwell sent out the necessary appliances last week to enable the pushing of work on their big mine on the desert.

Charles Briggs and L. Martin, who have been at work running a tunnel into a mountain of ore near Elsinore, have struck a rich, free milling body of ore, and are feeling justly jubilant.

Miners from the Tauquitz mining camp who have been doing some prospecting in the vicinity of Torres mountain have found some very rich float, the assay of the same running 2300 ounces in silver and sixteen ounces in gold. Diligent search is being made for the ledge.

The electric and cyanide plant is being put into position on the Kenworthy and Hansen lode in the Tauquitz mining district, this county. Mr. Hansen, the superintendent, hopes to have the plant in running order by the first of August. Fifty tons of ore will be treated daily.

The Lost Horse mine in the Pinot district, this county, has been incorporated under the head of the Lost Horse Mining and Milling Company. The amount of the capital stock is \$500,000 divided into 5000 shares of the par value of \$100 each, and the conditions upon which it is to be paid in are as follows. The whole thereof immediately upon making the subscription therefor, and the stock shall be fully paid before being issued. The directors are T. C. Ryan of Banning, Jeff Ryan and A. B. Ryan of Miles City, Mont., N. F. Ryan of Banning and S. M. Kelsey of Kansas City, Mo.—*Riverside Globe*.

The English company, who own the Gavi-lan Grant report that they have a grand mine in the Riverside mine, they are down 260 feet and have a 5-foot vein which is simply lousy. Thirty-five men are employed.

SAN DIEGO COUNTY.

Liberal offers have been made to discoverers of mineral on Cuyamaca grant near Julian in San Diego county. The Stonewall mine, formerly a large producer, and yet a rich mine, is on this grant.

Work is being pushed on several mines near Oak Grove. Chief among them is the mine of William Vaughn, who is pushing a tunnel on an eleven-foot vein of well-paying rock. The Stevens brothers also have a good mine in this vicinity.

It is reliably reported that S. W. Dorsey, will erect a 100-stamp mill and build a railroad to the Colorado River from his Picacho mines, now that he has succeeded in floating his property on the London market. This

property, which is located five miles south of the Colorado river in the Picacho basin consists of thirty full claims about one mile long by three-quarters of a mile wide. A number of parallel ledges pass through all the claims, the veins being from 20 to 600 feet wide.

A quantity of ore was crushed at the Ella mine at Julian a few days ago that netted \$47 to the ton.

Another gold mine has been discovered on a ranch near Julian the ore from which is reported to be quite rich. Jesus Olla made the find.

The Golden Cross.

The Golden Cross mines, on the Colorado Desert, in San Diego county, have been almost constantly in trouble. These mines are again in the hands of a receiver. Two years ago, owing to large liabilities, the mines were placed in the hands of W. W. Stewart as receiver. Having placed them on a good paying basis, and paid off a large part of the indebtedness, he was discharged about two months ago, and the property turned over to J. Spiers, J. Sloss and others holding a deed of trust. Recently the Golden Cross Company entered into an agreement to sell to the Free Gold Mining Company the mines for \$1,500,000. This company, organized by Isaac Trumbo of San Francisco, appeared in court and asked for a temporary injunction restraining these trustees from working the property, and to quiet title. The writ of injunction was granted, and C. W. Pauly of San Diego was appointed receiver of the property, with his bond fixed at \$25,000 and compensation at \$400 a month.

COLORADO.

(Extracts from *Mining Investor*.)

Cripple Creek Notes.

The Climax No. 2, on the south slope of Squaw mountain, has come to the front with an assay of \$327 in a 60-foot shaft. The Montana, a fraction near by, has also uncovered a fine-looking vein.

The returns from Lessee Smith's shipment of work ore showed much better values than the company's shipment last month. It was divided into two lots, one of which went at the rate of \$62.50 per ton and the other at \$54.50 per ton. The royalty check was the heaviest the company has ever received.

Kirk & Co., in their lease on the Ajax, have opened up an immense body of ore that is steadily increasing in values. But a few days ago it assayed \$11.80. Now its average is \$17. New ore bins will be put up at once and a trial shipment saved.

The Theresa, located on Bull hill, has been making a number of shipments lately. One carload was shipped that is expected to run from \$75 to \$100 per ton. Development work is being pushed and the general outlook at the mine is very encouraging.

Jimmie Doyle is prospecting the surface of the St. Patrick, which he recently bought. A hole is being sunk on the claim about 50 feet south of the main working shaft, and at a depth of six feet a promising lead has been opened. The main shaft is not working at present.

Manager Bergeron, of the Christmas mine, has received returns from two cars of ore sent out last week. The ore ran at the rate of

\$14 per ton for a lot of screenings, and \$18.50 for a lot of low grade. Another carload shipment will be made to the Cripple Creek sampler next week.

Durango.

The blasting last week in the Irodos tunnel disclosed a new ore feature on the hanging wall which is important. The vein which has been followed is on the foot wall. It has been irregular lately, and was pinching out when the new vein came in. Only about six inches of the new feature shows. It is tellurium in character and somewhat resembles the rich Durango Girl ore.

The cross-cut in this gulch for the Genoa vein is within a few feet of completion, and it is expected that ore of the same character as that in the Irodos which will be found when the vein is cut. Fred. F. Shrader, the owner, went out to the Genoa to stay a few days, anticipating the completion of the cross-cut.

An important strike has just been made on the opposite side of the range in the same gulch where the Columbus was situated and just below the Columbus. A most encouraging feature is shown in a vein of about five feet in the Gold Bond lode, a new location recently made by Fuqua and J. H. Flood. Some of the ore which has reached Durango resembles the Columbus ore, and free gold in tellurium is readily discerned with the naked eye. Average samples gave assay returns of from \$19 to \$100 gold and silver.

Dumont.

The Boston Company, operating the Eagle, has commenced the construction of the mill race on Clear Creek, and has the machinery bought for a 50-ton concentrator. This will be erected as quickly as possible, for at the mill the ore is piling up under the development work being carried on. It is estimated that several thousand tons of concentrating ore is now on the dump ready for treatment, while in the mine all of the levels are in ore, and this is being blocked out ready for stopping. The streak is large, and the average value of the low grade product is \$10 per ton. There is some smelting ore, but it comes in bunches and must be cobbled.

N. A. Lartigue, sinking a shaft on the Pioneer lode, has opened out a very rich streak of quartz. It is free milling, and a shipment has just been treated at the Mixsell mill at Idaho Springs.

Pine Creek.

A miner from Silver Creek recently stated that a good strike had been made by Denver parties in driving a tunnel into the Silver Creek side of Michigan hill, which is good news for that portion of the district.

Shirely & Co. are reported to have a good body of ore in their Independence claim in Moon gulch, at a depth of 60 feet, and some of the ore has been shipped for a trial run.

Manager Whedon of the Martin tunnel reports a splendid showing in that property, and it will not be long before the Martin will become a shipper.

Dick Jenkins, who is working the Gen. Putnam claim on Colorado hill, is still taking out a splendid lot of ore, and this week received returns from a test lot sent to the State Ore Sampling Works, at Black Hawk, which showed values of \$211 per ton. He is at present making a road down that side of the hill on which the mine is located, and soon shipments will be commenced.

O. T. Hazelberg, the barber, while panning in the creek behind Apex during the past week, took out one nugget of a value of \$4.65, and this has started several parties on the hunt for the shining gold.

LOWER CALIFORNIA.

The schooner, Anita, which arrived in Ensenada from Santo Domingo, last week, brought up \$10,000 in gold bullion. The Ybarra Mining Company is treating the tailings at their Calmalli mines by the cyanide process with excellent results, the above being the first shipment of bullion obtained by the new process. The company is actively engaged in developing the mines, sinking and drifting, though the twenty-stamp mill is not in operation.

A quantity of machinery has been taken from Tia Juana to the Juarez mining camp, to be used in developing the placer claims recently sold by McCool, Cleveland & Co. to an eastern syndicate.

At a meeting of the Club Internacional, in San Diego, Cal., Manuel Riveroll read a valuable paper on the natural resources of Lower California. We will give a short review of the article, extracting only items pertaining to mines, mining and minerals.

The territory of Lower California lies between the parallels 22:53 and 32:42 north. The boundary line joins the county of San Diego, and the population is over 30,000.

To give a general idea of the wealth of the peninsula, we will start on a mental trip from Tia Juana on the boundary line, following a road that we will call the coast road as far as Cape San Lucas, and returning by the coast of the gulf of Cortez and the mountains to Tia Juana, the starting point.

From this place towards Ensenada, we cross the valleys of Tia Juana, Carrizo, Las Palmas, Vallecitos, the beautiful and fertile valley of Guadalupe and San Antonio. There is not much mineral discovered between these points. Continuing, we meet with the table lands of Ensenada and San Carlos, and the Maneadero, Punda Banda, La Grulla, Santo Tomas, San Vicente and San Antonio del Mar valleys.

Near San Vicente and upon the shores of the sea at San Ysidro, are the Tepustete, Constanza and other mines, containing a very high grade of excellent iron. The veins are abundant, are less than a thousand yards from the landing place. Copper mines are found also in the vicinity of San Vicente and San Ysidro.

Further on, Harry Johnson is working some gold placers at Socorro, where he has built a ditch eighteen miles long, and which promises to return him a large fortune. Then follow the valleys of Colnett, Camalu, San Quintin, Santa Maria, and the gold placers of El Tule, the onyx quarries and the copper mine of San Fernando.

At San Quintin we find the salt deposits bearing the name of the place.

As we travel towards Calmalli we cross desert lands with but few watering places—making the road excessively disagreeable, but containing various kinds of minerals, marble, onyx and other products, which in time will be worked. At Calmalli we find the mining camp of the Ybarra Gold Mining and Milling Company, where hundreds of thousands of dollars have been spent, but which have also produced large quantities of

gold. Some miles from Calmalli and at the bay of San Bartolome, the Pacific coast, are the salt deposits of Ojo de Liebre, over six miles long and about two miles in width.

Beginning our return journey from San Jose del Cabo to La Paz, we find at the town of Triunfo the famous silver mining and milling camp of the same name, which has been working for over twenty-five years.

Upon the Carmen island, in the gulf, are the inexhaustible salt beds of the same name.

From La Paz up to Santa Rosalia, we pass through Loreto, a very small port, but the oldest. The capital of the territory was first established there, and a few miles distant the copper mine, El Sauce, producing the virgin metal is found.

Upon arriving at Santa Rosalia, we find the vast copper mining and milling camp, El Boleo, a French company, whose works it would be hard to improve upon, represents an investment of several millions of francs, and its employees number about 3,000. Foreign vessels and others of domestic ports, both sail and steam, touch exclusively at the port for the company, representing considerable annual traffic.

The island of San Marcos, opposite Santa Rosalia, contains gypsum in abundance. It is suitable for fertilizing and for making plaster paris. This material abounds in the Santa Maria canyon, 15 miles from Santa Rosalia, and about 18 miles further on is the Reforma lead mine, of a very high grade of ore.

Following our road towards Tia Juana, we pass through the village of San Ignacio. We travel through the missions of Santa Gertrudis, San Regis and San Borja, containing but few people.

Near by the gulf of Cortez is the silver mining and milling camp of San Juan, which has a transmitting cable of several miles in length, and beyond it the gold mining and milling camp of San Francisquito, operating with capital from Los Angeles.

We now thread the ranges of San Pedro Martir, Santa Catarina and Laguna. Near by the Laguna are the Juarez gold placers, which have produced large amounts of gold.

On the Colorado river meadows are the nitrate beds and an abundance of gum copal. In the Cucapa ranges are the sulphur deposits, work upon which has just been undertaken by an American company. Alum beds exist in the same neighborhood.

Continuing our road, we arrive at the mining district of Alamo, 75 miles from Ensenada. Several mines with an abundance of ore of different grades feed five reduction works. At Jacalitos there are three reduction works maintained by a few mines with more or less ore, but of rich grade. These camps, of Alamo and Jacalitos, are near the valley of San Rafael, fertile and fruitful, with a large supply of water and not far from Real del Castillo, in the surroundings of which are many mines of gold, producing much ore, although of low grade. This place is destined to have a great future when parties possessing capital, intelligence and energy shall utilize the waters of this river to generate electricity and mill the ores brought from these mines, but which cannot be done today owing to the high price of fuel.

Continuing, we see the pretty valleys of San Faustino, San Juan de Dios, El Compadre, La Hechicera, Neji, Los Juntas, Tecarte, San Ysidro and Rock Spring, then entering Tia Juana, our point of departure.

By the rapid review which I have just given, we see that Lower California is shown

to contain: Gold, silver, copper, lead, iron, marble, onyx, salt, sulphur, alum and nitrate.

In the south are silver mines and reduction works of Triunfo, and the copper mining and reduction works of El Boleo, second to none in the world; and in the north, the Ybarra Gold Mining and Milling Company's works; and the fruitful and flourishing gold camps and milling works of San Francisquito, Alamos and Jacalitos; and lastly, the gold placers of Socorro, Valladares, Tule and Juarez.

Mr. F. M. Bradshaw states that work on the Aurora and Moctezuma mines in the Alamo will be prosecuted on a larger scale than heretofore and with improved facilities, as compressed air will be used in both mines, the air compressor and boiler having arrived on the steamer Pacheco, July 23. Two Rand drills have already gone out to the mines, and a new rock breaker, double cylinder hoist and boiler for the Borracho mine are now on their way from Chicago.

The Aurora shaft is down 180 feet, and Mr. Bradshaw states that the last forty feet has been made through solid dyke, and sinking in consequence has been extremely slow and expensive. However, they are now through the dyke and in granite and there is no doubt that drifting and cross cutting will reveal the ore body.

The condition in the Moctezuma mine is very much the same, the shaft having been pushed through the dyke, though in this mine they have the ore seam and it is shortly expected to open out.

The Rand drills will be the first of the kind ever used in that district, and power drills will rob these dykes of much of their terror, which has been the great cause of discouragement in mining at Alamo. The compressor and drills are expected to be in operation in about two weeks.—Ensenada Lower Californian.

MEXICO.

(Extracts from Mexican Trader.)

Puebla.

This state, like almost every other in the Republic, is being overrun by prospectors who are searching for gold and copper properties. A very successful strike has just been made in the southwestern portion of the state where several large veins of copper have been discovered. Some of the mines in the group were worked centuries ago by the Spaniards, the remains of whose furnaces and buildings still remain, as well as traces of extensive workings in the mines themselves. The ores are red and black oxides of copper, and average about ten per cent in copper, and carry a small amount of silver. As the mines are near the railway, with which they are connected by a good wagon road, and as a powerful waterfall is near, this strike will soon be a heavy producer.

State of Mexico.

The board of directors of the well known gold property, La Esperanza y Anexas, situated in the El Oro district, which was recently secured by C. D. Lane, of the Utica mine, in Los Angeles, Cal., were composed of Messrs. Pedro G. Mendez, Jose Luis Requena, Genaro R. Fernandez, Julian Perez Duarte, William Brockman and Donato de Chapeaurouge. The substitutes are Messrs. Vicente Mendez, Guillermo de Landa y Escandon, Manuel Calero y Sierra, Domingo Gomez and

August Sahlberg. It is this last named gentleman who originally located the Esperanza mine, and organized the company for its development. In the development about two kilometers of tunnels have been driven, and nearly one thousand metres of portable tramway have been laid in the same. The metals, gold and silver, showed an average of nearly \$30 a ton in value. Last July, the beneficiating plant was put in with a capacity for 700 tons.

An idea as to size and importance of the property may be gathered from the fact that there are no less than 553,750 tons of ore in sight.

There are several other big mines—notably the El Oro, yielding more than \$1,000,000 a year in the same district, which are beginning to attract great attention as gold producers. At the present moment some well known experts are examining three or four fine prospects in the district with a view to purchase.

Guerrero.

In the district of Mina, at the San Felipe mine, there has just been made a wonderful strike, the first 175 tons extracted yielding 1,800 ounces of bullion, which gave at the mint 1,400 ounces of fine gold. The extraction, freights, treatment, mintage, and other charges against this product did not amount to \$10,000, silver. There are about 150 tons more of the same class of ore on the dump; this has to be freighted about ten miles to the mill, which has five stamps and plates. The owners are going to erect at once a large mill, using the profits to pay for same. The plant will not be complicated as the gold is perfectly free, being contained in a quartz gangue carrying the oxide of iron. This property is about 5,000 feet above the sea-level, and is surrounded by extensive forests of pine and oak.

The San Luis, another fine mine located about 3 kilometers from the San Felipe, has just been sold to Reed and Gunby.

At Yolotla, about 40 miles from San Nicholas, still another strike has just been made in La Americana. The ores are sulphides in a quartz gangue, in which the gold does not occur in a very free condition, but is amenable to treatment by the cyanide process.

Messrs. Bass, Armstrong, Shaw and others, have secured by purchase a very valuable and extensive property in Aldama district, the ores are oxides of lead and iron in which the gold is contained. This is, perhaps, one of the most extensive properties in the state. Several large copper veins have been taken up in Aldam district upon the assurance that the Mexico, Cuernavaca & Pacific Railway is to be built near them.

Sonora.

It is reported that Sr. Juan Pedraziny has sold his rich El Carmen mine near Querobabi, Sonora, for \$1,000,000. He also retains a few shares of stock in the mine.

Tamaulipas.

The mines which are worked in this state are exempted from the tax of one per cent on the value of the metal which they produce. All mines, the working of which shall be commenced within a period of five years, will be entitled to the same privilege.

Andy Evans, the famous mining man of Durango, has just closed the sale of the well known property the Avejo, concerning which

so much has been said and written. He controls now almost all the best properties in the Paunco district.

A car load of hoisting machinery for Nacosari, has arrived at its destination.

Notwithstanding the low price of silver, the sale of good silver properties in Mexico still goes on. The San Christobal mine, at Zacatecas has just been sold to a New York company for two hundred thousand dollars in gold. Mr. Anthony Bray, the owner, selling three-fourths of the property at the above price and still retaining one quarter.

Clarence King, the well known expert, made the first examination and was followed by Mr. Von Cortland, who also reported favorably. When Mr. Bray took charge of the property, there was but little to encourage him, but he has labored earnestly and determinedly, and his good judgment and persistence are now being rewarded.

The dredger of the Yaqui River Mining Co., was completed on the 12th ult., and it was expected that the work of dredging and sluicing the bed of the river for gold would begin about the 15th ult. The operations are at San Antonio de la Huerta, nine miles down the river from Soyopa, in the State of Sonora.

There is every prospect of a little mining boom in the Santa Rosa near Pachuca. This district was notoriously rich in Spanish days, but was little worked after their expulsion. It was remote and in good old revolutionary days quite unsafe. The famous Baron Humboldt visited that part of the republic and was much impressed with its mining possibilities. The Ernestina, now looking so well, is in this district—*Mexico City Telegram*.

The enterprising firm of gold and silver refiners and assayers, Smith & Irving, formerly Wm. T. Smith & Company, have just compiled a pamphlet of useful information, *Miners' and Prospectors' Handy Reference Book*. It contains a complete copy of the new law for the location of mining claims; a warning to locators under the new law, bringing out different points that should be noticed when locating a mining claim, and a copy of the law protecting stockholders. The book also gives some interesting facts relative to the precious metals in common use, such as gold, silver, copper and lead. It also gives a synopsis of Troy weights, specific gravity, solid measure, how to clean copper plates, value of some of the precious metals, weights of ore, gold values, the hardness of minerals and the coins of the United States. The booklet contains 36 pages, and is handsomely printed on a good class of book paper. It is issued complementarily by the above firm, who are well known in this city. Copies of this work can be had free upon application.

NEW MEXICO.

Red River Camp.

The Jayhawk is running three shifts of five men each at present and producing some good ore.

A. E. Eckles has a claim up Mallette canyon that is well spoken of. He produced some very fine specimens from it this week.

The Willard up Red River still attracts considerable attention. This property is one of the few free milling propositions in camp, and will be heard from later.

Some rich tellurium float has been found and it is hoped to be able to chronicle the fact soon that the vein itself has been found also.

Red River district has more real prospecting going on than for a long time. Nearly every evening as the prospectors come into town some new strike is reported.

Frank Wright, of Wichita, Kansas, president of the Memphis company, arrived in camp last week, in company with George Phillips, general manager of the Red River mining and Investment company which controls the Edison mine.

Mr. John Houghland, who is largely interested in the Golden Cross mine, (which is being operated by the Golden Cross Mining Company, composed of Kentucky people, and located in the Carizillo mining district, not far from Deming), and in charge of work being done, reports that early this week he discovered an old shaft, from which it is known was taken years ago ore that ran 2000 ounces in silver. Mr. Houghland has been looking for this old shaft for some time, and is at last rewarded for his labor. This shaft when found was filled with large boulders and the top of the ground fixed up to resemble the natural state, and having been left in that condition for several years, it was a hard matter to find it.

From present indications, this mine will prove to be one of the ore producers of the territory.

Hillsboro Mines and Mills.

Output of Hillsboro gold mines for the week ending Thursday, July 22d, 1897, as reported for *The Advocate*:

	Tons
Wicks.....	65
Butler.....	20
Richmond.....	65
Happy Jack.....	20
Snake Group.....	65
Opportunity.....	10
Sherman.....	25
Prosper.....	10
Eighty-five.....	10
Rex (silver-lead).....	15
Total.....	305

Total output since Jan. 1, 1897,—5,255.

It is reported that a good sized pay-streak of high grade ore has been recently opened up in the Independence mine, at Chloride.

Ignacia Brown and J. R. Hopkins have purchased a half interest in the famous Cincinnati mine, in the Tres Hermanas mining district, and are working the same in conjunction with the other half owners.

Elizabethtown Notes

The Legal Tender Mining Company has been organized by A. C. Majors, W. P. McDonald and John W. Williams, of Elizabethtown, New Mexico; A. S. Goodwin and G. W. Goodwin, of Kansas City, Missouri; J. W. Sherlock, of Emporia, Kansas, and articles of incorporation filed in the territorial secretary's office. The company is formed for the purpose of conducting a general mining business, with the principal place of business located at Elizabethtown; capital stock, \$500,000.

For some time a rumor has been afloat that a great find had been made about four miles west of town by H. H. Shuman. Owing to Mr. Shuman's well known powers of elabor-

ation and embellishment, due importance was not given to the report. Henry Hart, of Gallup, and his partner, Peter Doefer, did, however, make a thorough examination of the property, and were truly astounded at what they found. Monday, July 19th, Mr. Hart brought about twenty-five pounds of ore into town, with each and every piece showing liberal quantities of wire gold. Two assays made by different parties run respectively 87½ ounces and 45 ounces. The property was in such shape that Hart and Doefer managed to secure a one-half interest. Work of sinking on the lead has commenced, and a carload for shipment will be taken out as quickly as possible. This discovery is one of the most important made in the camp for some time, and if present indications be taken for anything, this new property will become one of the best producers in the camp.—*New Mexican Miner*.

NEVADA.

Assays from the Little Gem mine at Gold Creek, Nevada, show a value of \$135 in gold to the ton from a ledge 1 foot wide. On the opposite side of the hill it is believed the extension of this ledge has been uncovered.

A new quartz belt has recently been discovered at Allum Creek, near Hawthorne, Nevada.

Gold Creek Notes.

The Empire Shaft was down 71 feet last week and the rock was getting harder.

The Constitution shaft was down 26 feet the other day. Very little water was coming in.

Chas. S. Newhall and Sydney L. Smith have located the Mary B, a five foot ledge on the divide east of town.

Jim Glass is doing assessment work on the Summit, a claim near the Oro Grande in which he and the Shivelys are interested.

July 20th the Diana shaft was down 36 feet. There is considerable water coming in which greatly retards sinking. The quartz in the bottom was looking all right.

L. C. Bayer discovered a ledge cropping where the grading was done on the road up to the townsite. He believes that if it the same ledge Miller and Reynolds have uncovered on Island mountain and he feels they have jumped his property.

F. A. Curtis, a mining man of Denver, and W. B. Duvall arrived in camp Tuesday, July 20th, from a trip to the Van Duzer placers. Mr. Duvall had with him ten nuggets that were found over there in the August-Hayward property. The least of them was worth three or four dollars and several of them had a value of about twenty dollars each. Mr. Duvall believes that Van Duzer will rival the richest diggings of California. He says the boys make their cleanup in a tin cup picking up the gold with their fingers and are taking out from ten to forty dollars a day to the man.

It was in 1895 that John L. Coots and M. J. Fitzgerald discovered a big ledge on Duncan mountain. An assay from the surface gave a trace of gold and three ounces of silver. Returns just received from Salt Lake on ore from the bottom of the 30-foot incline give \$2.40 in gold and 75 cents in silver.

Fitzgerald parted with his claim some time ago, and it is now owned by J. J. and R. J. Davis. The incline is run as a joint work on the end line between the two claims. Coots

covers the north end of the ledge with the Sioux City and the Arcade runs south. The boys expect to resume work soon.—*Gold Creek News*.

Active work is being done in Consolidated Virginia, in Nevada, and in several other mines on the Comstock. The bullion return of Chollar for May was \$24,000 in gold coin. Much of the Chollar ore is from the Brunswick lode. As a whole, the present condition of the mines is rather encouraging. A few tons of ore are being raised in Overman. In Belcher it is said that operations are about to be resumed on the 1,200-foot level. In Consolidated Virginia, on the 1,550-foot level, the incline is in ore assaying from \$4 to \$20 per ton. The most active work, and that most closely watched is being done on the 1,650-foot level. From this there were extracted recently ninety-two tons of ore assaying by sample \$56.48 per ton. In Chollar, in the Brunswick lode, the ore is pinching above the 300-foot level, and the grade is lower.

GENERAL NEWS.

The Colorado Iron Works Company reports the following important shipments: To Britannia Mining Company, of Ainsworth, B. C., one set of 14"x27" crushing rolls: To British Columbia, machinery for ten-stamp mill, including vanners, crushers, etc.

Electric Furnaces.

Electric furnaces are now playing so important a part in scientific and industrial operations that it is useful to know something of their construction and application, which can be easily understood. Two forms of furnace have been devised—one in which the desired heat is obtained by rendering a certain part of the circuit incandescent, and the other in which the electric arc is used. It is with the latter that the most powerful results are obtained. One of the simplest that has come under our notice is that known as the Street Girard furnace. Unlike most other forms, its center of activity is not confined to any particular spot, for by the passage of the bar or article operated on, through the furnace, the heat can be made to operate over a considerable surface. The heating chamber is simply a hollow space formed in a block of suitable heat-resisting material. This is so supported that the carbon rod, which forms one the electrodes, can be passed in through one side, while the other two openings, through two other sides, serve for the passage of the other electrode, which is the bar or rod of metal to be treated. The current is led to this bar by a friction contact, and the bar is fed through the furnace by a system of mechanical rollers geared to an electro motor. Any length of conducting material in the form of rods or bars can be dealt with by passing them through the furnace in succession, thus greatly extending its sphere of utility. When the substance to be treated is in a pulverized condition, the movable electrode takes the form of a tube or refractory material, and the operation is conducted in a similar fashion, or it may be set in motion inside the tube itself, which in that case is a fixture, the arc being produced between two horizontal carbon electrodes with the tube containing the powder between them.

The *Evening Telegram*, Vol. 1, No. 3, of the City of Mexico, is one of the bright, newsy sheets, printed in English, that has

placed us on their exchange list. The *Telegram* is a new enterprise in the City of Mexico, and we wish it all the success in the world.

The copper production for 1896 reached the largest total ever reported, 467,822,923 pounds, equal to 208,850 long tons or 212,201 metric tons. Over half of the production was sent abroad, the shipments to foreign countries amounting to no less than 123,605 long tons or 59.2 per cent of the output. Had it not been for an extraordinary foreign demand the production of copper must have been very much curtailed, instead of showing as it did, an increase of 81,369,123 pounds, or 21.1 per cent. The foreign demand also kept up the average price, which was 10.88 cents per pound for Lake copper in New York against 10.76 cents in 1895. This price is probably about half a cent above the general average for the metal, when the large sales of electrolytic and casting copper are considered.

Word comes from Spokane that the directors of the Le Roi Mining Company have let the contract for the new smelter to treat the ores from the Le Roi mine at Rosslund, B. C. The exact location where the plant will be erected has not been made public. The contract for the entire plant was captured by Mr. Robert J. Cory, the general western agent of the Edward P. Ellis Company of Milwaukee.

The time for shipment allowed the contractors is 70 days from the signing of the agreement.

Cripple Creek Output.

The Cripple Creek district of Colorado during the first six months of the present year produced in the neighborhood of 135,000 tons of ore of all all grades, which is estimated to be worth \$45 per ton, which means a total gross value of \$6,075,000 or a little over \$1,000,000 per month. This is an increase of 25 per cent over the first half of last year, both in tonnage and value of the product. The output for April, May and June was 75,000 tons, which had a value of \$3,500,000. Last month which was the banner month of the year and also in the history of the camp, the tonnage exceeded 27,000 tons and its value was estimated to be only a few thousand dollars short of \$1,200,000. Judging by the record made in the first half of the year Cripple Creek will add to the world's supply of gold 700,000 ounces in 1897; which will have a coinage value of \$14,000,000. The tonnage is estimated now to exceed 300,000, which will be an increase of 50 per cent over that of 1896. The increase in value will be from 33 1-3 to 40 per cent of the value of last years product.

The decline in value per ton is brought about by the increase in number and capacity of the cyanide and chlorination mills, which handle at a profit to the miners ore running as low as \$12 per ton. In June 60 per cent of the ore shipped from the camp was sent to these plants and during the last four months of the year, when the additions to the old plants and the new ones which are now under construction are running, these mills will treat from 70 to 75 per cent of the tonnage. It is safe to predict that the smelters when the yearly figures are compiled will show that less than 35 per cent of the ore mined in the Cripple Creek district, was treated by fire. Its value, however, will exceed the 65 per cent from which the gold was taken by the cyanide, chlorination and amalgamation plants.—*Rocky Mountain News*.

Weber Gas and Gasoline Engine.

In our issue of April 15th, we illustrated and described a 10 H. P. geared, hoisting engine, built by the Weber Gas and Gasoline Engine Company, of 434 S. W. Boulevard, Kansas City, Mo. We illustrate and describe today one of their heavy 40 H. P. geared hoisters.

This machine weighs about 12,050 pounds. It is built very compact, and will go into a room 7x13 feet 72". These hoisters are so arranged that, by changing the ratio of the gearing and the size of the drums, the Company can give almost any lifting capacity with a corresponding foot travel—either high speed machines for light work, or slow speed machines for heavy work, as may be desired.

A large number of these machines are used for underground hoisting and pumping, thereby saving in the cost of installation and the cost of operation very largely over the expensive Compressed Air plants, now in use for this class of work.

All of the Weber Engines can be operated to use either gasoline, city gas, distillate or crude oil.

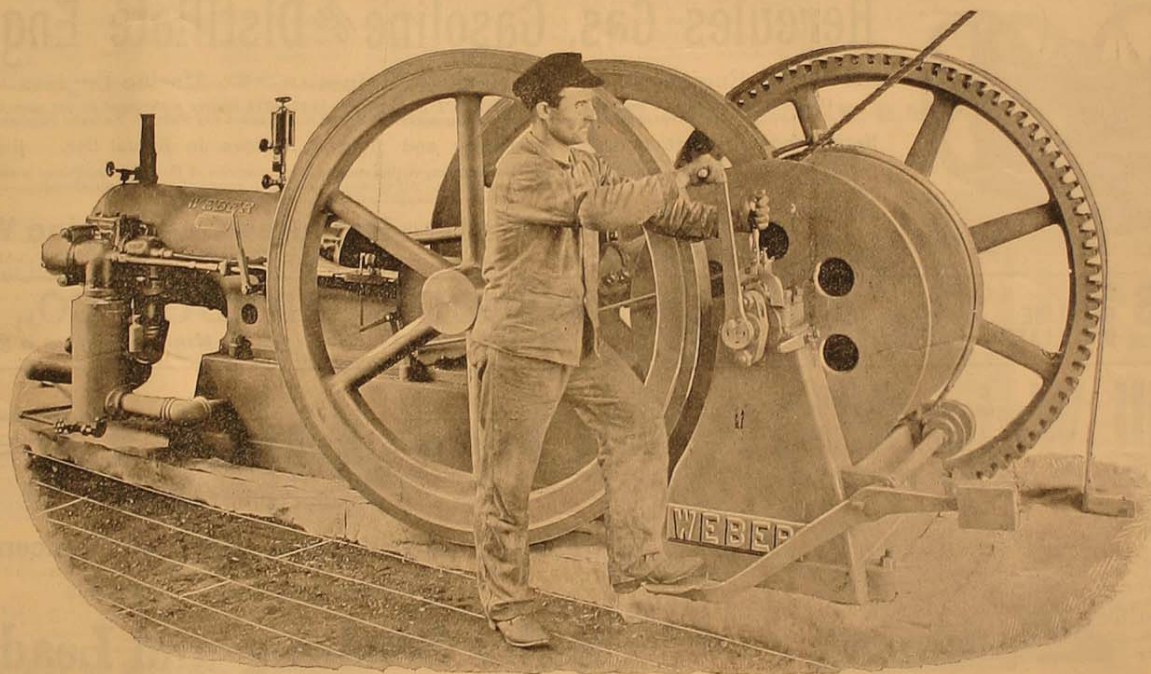
The Company issues a very neat catalogue, pertaining to Weber Gasoline Hoisting Engines, which will be sent to interested parties on application. This catalogue also contains a list of supplies, such as rope, water barrels, ore buckets, trolley cars, gongs, dump cars, etc., etc.

We are in receipt of a copy of the new catalogue No. 9 of the Clayton Air Compressor Works of New York, of Air Compressors and Compressed Air appliances. It is the most complete work of the kind ever attempted. It contains, in addition to an illustrated description of the features of the Clayton type of Air Compressor, illustrations and lists of sizes of the standard patterns of Compressors, and a descriptive article upon the Widening Use of Compressed Air, showing all of the various applications of this power up to date, together with cuts and descriptions of Com-

and at the same time would bring mining men here, who would spend money for machinery and supplies. The construction of a smelter in Los Angeles was commenced about five years ago, but was abandoned on account of financial difficulties. The local mining exchange, in conjunction with the various commercial bodies of Los Angeles, could engage in no more useful work than in securing the building of extensive reduction works, either in this city or at San Pedro."

A Gigantic Flume.

The Detroit Copper company had engineers make a survey to see if it was possible to flume water from the head of Eagle creek into Morenci. The engineers reported it feasible; that the flume would be fifty or sixty miles long and would cost about half a million dollars. The engineers are now at work making their final survey. This is a great deal of money to spend for water, but water has al-



WEBER GEARED 40 H. P. GASOLINE HOISTER

Referring to the large cut, which shows the machine very accurately, it will be seen that these machines are built exceedingly heavy, special attention being paid to safety.

All parts are of ample size, to withstand extraordinary strains. The feature of using one heavy base casting, on which all of the machinery is mounted, making the alignment perfect and continuous, is especially commended.

These hoisters are in use by such well-known concerns as the Consolidated Kansas City Smelting and Refining Co., Philadelphia Smelter Co., etc., etc.

Mr. H. B. Hanna, manager for the Gopher Gold Mining Co., of Chaparral, Ariz., under date of June 7th, writes that the geared hoist has been in continuous operation since May 23rd, doing everything guaranteed with perfect satisfaction, and that they are actually saving \$12 per day over a steam hoist.

Mr. J. T. McLaughlin, of San Pedro, N. M., using a 10 H. P. Prospecting Hoist, working one shift, is doing all of his hoisting for 32 cents per day.

pressed Air Tools and Appliances. It also illustrates and explains the Clayton Air Lift Pumping System.

Among the other contents of the Catalogue will be found valuable data for figuring the loss of pressure due to friction in transmitting compressed air through pipe and the capacity lost by Air Compressors in operating at various altitudes above the sea level.

Air Receivers, Vacuum Pumps, Fly Wheel Steam Pumps, Compressors for Carbonic Acid Gas, Compressors for teating under high pressure, etc., are fully described. This Catalogue is issued for gratuitous distribution and will be forwarded upon application.

The Los Angeles Times of last week had a column editorial suggesting that Los Angeles should have a smelter. It says:

"What Los Angeles particularly needs just now, in order to develop the mineral resources of the surrounding country, is a smelter. This would at once bring to the city a very large amount of money that now goes to Pueblo, Kansas City and other points,

ways been an expensive luxury in Arizona. The company now gets its water by pumping it from the river. This is very expensive and the water is not very good, there being considerable alkali in it. This alkali attacks the pumping machinery and the pipe line, making frequent renewals necessary. With the flume the expense of the pumping station would be done away with, the company would get better water and a larger supply, a larger power could be produced, thus saving money now spent for coal, and besides this there is an abundance of timber at the headwaters of the Eagle which could be cut and sent down the flume and thus furnish the company with mining timber much cheaper than it is now supplied. The Detroit company has plenty of capital and is not afraid to spend it if it can see that it will be able to make a small saving on each pound of copper produced. The company has enough ore in sight to keep its works running at an increased output for many years and a saving of a cent a pound on the cost of producing the copper means a great deal of money.—*Liberal*.

Van Der Naillen's School.

The following is the thirty-third annual list of graduates of mining engineers and assayers from the Van Der Naillen School of Engineering, of 933 Market Street, San Francisco, Cal.:

Mining Engineers—G. L. Gruss, Genesee, Cal.; John Andrews, Middleton, Cal.; C. Maack, Petaluma; W. B. Duesler, Globe, Ariz.; E. Matterson, Shasta, Cal.; R. Tregrove, Neuman, Cal.; R. Von Reischach, Antofagasta, Chile.

Surveyors—H. L. Moulder, city; L. Smith, Spokane, Wash.; F. C. James, Johannesburg, South Africa; D. Smith, city; J. Gray, city; W. S. Keith, Rossland, B. C.

Assayers—A. Price, Angels Camp; J. W. Young, city; R. A. Troyer, city; Thomas Hanmore, Alaska; Alex. Keiller, Amador City; R. Caption, Oakland; A. Evans, San Dimas, Mexico; L. McCabe, Oakland; H. Punnett, city; J. M. Sullivan, city; J. W.

Curry, city; E. L. Fletcher, Oakland; A. E. Hanson, city; L. A. Pellett, St. Helena, Cal.; R. Remick, Taylorville, Cal.; M. D. Allen, Globe, Ariz.; W. L. Smith, Oregon; C. Rosenthal, city; A. C. Hall, San Jose, Cal.; A. L. Kievcy, Amador, Cal.; C. H. Smith, city; L. E. Bailey, San Jose, Cal.; J. Mackin, Buffalo, Ariz.; D. A. Conolly, city; R. J. Williams, Oakland; F. B. Hink, city; E. B. Honerton, city; C. E. Allen, Eureka; Nev.; J. H. Hennessey, Randsburg City.

We are in receipt of an important work, entitled *Stamp Milling of Gold Ores*, by T. A. Rickard. The author has a wide knowledge of this subject, and this notable work embodies the experience of mill men and the best examples of gold milling practice in every part of the world, and supplies valuable instruction for overcoming the obstacles ordinarily developed in the handling of gold ores. Such a treatise will prove of incal-

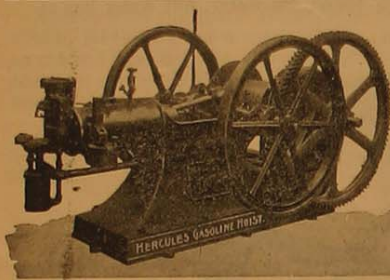
able value to those engaged in the actual work of the mill, as well as to the student and the teacher. The book contains 28 chapters, written in terse, modern English, with a grateful absence of technical terms, and it commends itself to the layman as well as the mine manager, mill man and metallurgist, to whom it will be found indispensable. It is well illustrated with working drawings and details of mills, and should be in the library of all those interested in mining and milling of gold ores.

PERSONAL NEWS ITEMS

Messrs. Krupa & Creigle, well known Kansas City gentlemen, are inspecting some mines in the State Line district of Utah.

J. W. Brewster, of Kansas City, Mo., is in Utah, inspecting some mines in the State Line district.

James M. Pierson, of Acton, this county, was in Los Angeles last week on business.



Hercules Gas, Gasoline & Distillate Engines

Hoisting Engines 2 to 200 H.P. Stationery Engines 1 to 200 H.P. Marine Engines 2 to 200 H.P.

Our newly designed and perfected DISTILLATE VAPORIZER insures a saving of 50 per cent. on cost of running. Just 1/4 your expense saved by using a HERCULES in place of any other. We make no exceptions.

Nearly 3000 Hercules hoisting, Stationery and Marine Engines in Actual Use. High Grade.

We claim full power, automatic and positive adjustment regulating speed and consumption of fuel in proportion to work being performed. No spring electrodes to burn out. All springs are outside. Points of ignition, speed and amount of fuel can be changed while engine is in operation.

We make a Specialty of Mining Trade. Address **Hercules Gas Engine Works**

Write for Illustrated Catalogue

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ENGINES GAS GASOLINE DISTILLATE

Cheap.

Reliable.

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The Best Jet Impulse Wheel in the Market, BARRING NONE.

Wheels, Buckets and Nozzles designed to suit Special requirements, when Head and Conditions are Given. Theoretically as well as practically perfect. Highest Efficiency Guaranteed. Contracts taken for any size plant



We have a Sensitive, Simple and Durable Governor, entirely new and novel, that will positively regulate speed of wheel. Specially adapted for electric rail way and Lighting Plants.

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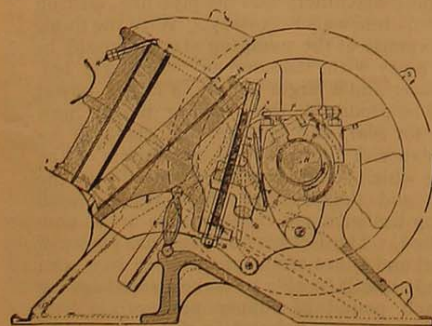
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Consign Shipments to Vallejo Junction, Cal.

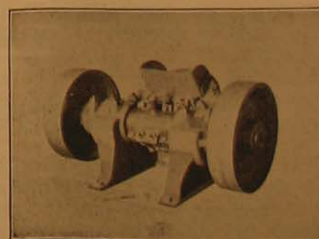
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IT REQUIRES LESS POWER THAN ANY OTHER MACHINE PERFORMING THE SAME AMOUNT OF WORK.



MORRIS ROCK CRUSHER

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D. M. DOUB, General Agt., 137 First St. San Francisco.

Andy Evans, the Durango, Mexico, mining man, has been in the City of Mexico, and has left for St. Louis and New York on important mining business.

G. A. Fudickar, of this city, is now in Johannesburg, where he is interested in some mines.

H. E. Westover, of Gold Creek, Nevada, has gone to Salt Lake, Utah, on important mining business.

The Hon. Henry T. Gage has been up to Acton, Cal., recently, looking after his mining interests and taking a rest from the busy life in this city.

J. P. Hutchinson, a well known Guerrero mining man, was in the City of Mexico last week.

Mr. Manuel, who located the famous Homestake mine, at Lead City, South Dakota, was in Johannesburg, Kern county, Calif., last week.

F. A. Curtis, a mining man of Denver, Colo., is now in Gold Creek, Nevada.

Thomas Kelley has returned to his home in Acton from Garlock, Kern county, Calif., for a few days' rest.

C. E. W. Smith, the well known mining man of Oaxaca, Mex., has left there for England, where his health is better, he being unable to stand the climate of Mexico.

W. A. Sims, of Randsburg, Calif., has just returned from a trip to Hanford, his old home.

H. B. Vercoe, of Perris, Riverside county, recently went to Letcher, Fresno county, Calif., to look after some work being done on the Copper King mine, of which he is the owner.

P. K. Hickey, of Phoenix, Ariz., intends leaving there for Alaska the latter part of July.

Major W. H. H. Llewellyn, of Las Cruces, N. M., was one of Hillsboro's noted visitors last week.

H. L. Hollis, a mining engineer from Chicago, has been looking over some prospects at Randsburg, Calif., where he intends to invest in the near future.

W. H. Banks, who represents an eastern company, has left Prescott, Ariz., for Harqua Hala, the other day.

J. A. Dubbs, of the Mexican Sulphur Company, arrived in Ensenada Lower California, from Ventura, Calif., July 23d.

E. H. Gould, of the St. Elmo mine, near Randsburg, Kern county, Calif., was a visitor in this city the other day.

Mr. Clark, general manager of the mining business of the Hearst estate, was visiting Prescott, Ariz., July 18th, on his annual tour of inspection of properties owned by the above estate.

W. L. Davis, a prominent Colorado mining man, arrived in Ensenada, Lower California, July 21st.

Frank Cole, of this city, has gone to Randsburg, in the interest of the Wood's Automatic Dry Concentrator Company, of which he is the representative.

Herbert Lang, the noted mining engineer of Oakland, Calif., was visiting, July 17th, in Los Angeles, Calif., Mr. Lang is also a competent smelter man, having been connected with copper smelting in Montana, and the State of Sinaloa, Mexico, and other parts of the world. He has made a specialty of pyritic smelting.

Robert S. Towne, president of the Mexican Ore Company, and of the Sierra Mojada railway, arrived in the City of Mexico, July 19th, from the north.

H. Deacon, of Sutter Creek, passed through Jackson, Calif., last week, on his way to Tuttletown, to visit his son who has charge of a quartz mill at that place. While on this trip, Mr. Deacon will visit some of the camps of Tuolumne and examine some quartz claims which belong to his son.

James Harvey, of Silver City, has just returned home from San Francisco.

Frank Wright, of Wichita, Kansas, has made Red River City, N. M., a visit. He has some mining interests at the above place.

R. J. Hill, of Kingston, N. M., contemplates a visit west in a few days.

J. J. Sheridan, of Silver City, has just returned home from San Francisco.

Noah Bullard and Joseph Gallagher have returned to Hillsboro, N. M., from their prospecting trip in Socorro county.

Mrs. Wm. Bankowski, of San Francisco, is in Jackson, Amador county, Cal., looking after her interest in the Alma mine, and is a guest at the residence of Superintendent John B. Francis.

A. W. Farrington, the Tierra Blanca editor and silver miner, has made Hillsboro, N. M., a visit.

Col. John S. Crawford, of Kingston, N. M., was in San Francisco last week.

E. G. Arthur, the well known mining engineer, went to Red Rock, Kern county, Calif., last week, on important business.

Lacy Manufacturing Co.

Manufacturers of

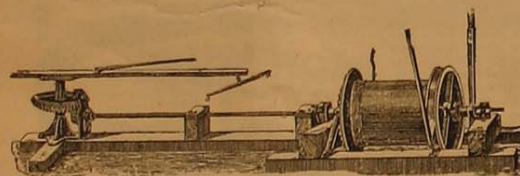
Steel Water Pipe, Well Casing, Oil Tanks and General Sheet Iron Work.
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Horse Powers!

Triple-Acting Pumps, Deep Well Pumps, Cornish and Jack Head Pumps for Deep Mining, Horse Power Mining Hoists, Stamp Mills, Ore Crushers, Ore Feeders, Ore Buckets, Ore Cars, Water Gate Valves up to 40 inches diameter, and Link Chain Elevators, Pipe and Pipe Fittings at lowest prices. Hydraulic Presses, We

also manufacture Cyanide Tanks and Centrifugal Sand Pumps for filling and discharging them. The Pumps work the tailings to perfection and are made to handle small or large quantities.

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Test Lead, Bone Ash, Cyanide

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Iron Sulphides, Litharge, Soda,

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Will show what is in your ore.....

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Practical working tests made of ALL CLASSES OF ORES and advice given as to best methods of extracting values. Mines examined and reported on. Twenty years experience with Pacific Coast ores.

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—AT—

CRIPPLE CREEK.

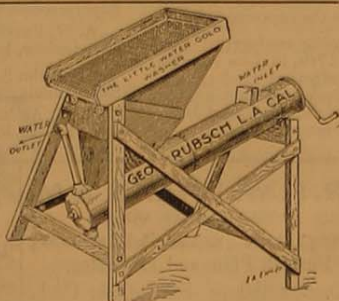
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PINK Gold Saved as Easily as the COARSE. NO WATER required for Cleaning up. We save 95 per cent. Come and witness a test on dry ground. Capacity of Standard Machines 10 Tons. Weight 125 lbs. Price \$90.00. First-Class Material Used Throughout. Capacity of Small Machine 5 Tons; Weight 80 pounds; Price \$80.00. Machines are easily Taken Apart to be packed or carried anywhere. We build Machines to any size—power or hand. Orders promptly attended to. Call or write for Circulars.

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Fossil and Asbestos Sectional Covering
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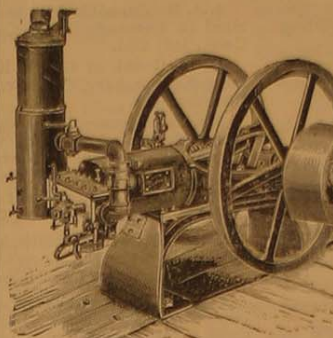
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"DANIEL BEST" Crude Oil Engine

This Engine can be operated on either Crude Oil, Distillate, Gasoline, or Kerosene. IT IS THE CHEAPEST POWER ON EARTH and is not tied to any one kind of oil, but can use any kind that will make gas and is not handicapped by being compelled to use a certain oil. Do not forget this when in need of an Engine.

We guarantee our Engines to work perfectly on California Crude Oil, or Distillate, or any other kind of gaseous oil; we however prefer CALIFORNIA CRUDE OIL, from Coalinga, Fresno county, for the reason that gas from Crude Oil will produce more power from the number of feet of gas used than from any other oil and it is also a natural lubricant as well, the valves being always lubricated sufficiently to prevent them from sticking, thus assuring greater durability of the working parts than it otherwise would be in using dry gas. And another advantage we claim is, that danger from explosions is reduced to a minimum, there being no accumulation of gas but is used by the Engine as fast as it is generated and hence is absolutely safe. The following is a test that we made with one of our Five-Horse Power Crude oil Engines running ten hours on the different gas oils:

Cal. Crude Oil	40 grav., 7 1/2 galls. at 5c.	\$.37 1/2
Distillate	40 " 7 1/2 " 8c.	.60
Dom. Coal Oil	40 " 7 1/2 " 12 1/2 c.	.93 1/2
Gasoline	74 " 8 1/2 " 15c.	1.11 1/4
City Gas	1000 feet,	2.00

We manufacture all sizes from two-horse power up, and will guarantee that our Engines will run cheaper and are more simple in construction, have fewer parts and hence are more durable than any other Gas Engines on the market. Seeing is believing; don't take our word for it, but come and investigate for yourselves. You can always see one in operation at our works. We will be pleased to see you and will at all times take pleasure in showing them up. Our Engines are specially adapted for running well and mining machinery—in fact, for any kind of power desired, we are the pioneers and first inventors of Crude Oil and Distillate Engines. WE ALWAYS LEAD AND NEVER FOLLOW. Send for Catalogue and Price List of the only genuine Crude Oil and Distillate Engine made.

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New York Quotations:

	SILVER.	COPPER.	LEAD
July 16	60 1/2	11 1/2	3 3/4
" 17	60 1/2	11 1/2	3 3/4
" 18	60 1/2	11 1/2	3 3/4
" 19	60 1/2	11 1/2	3 3/4
" 20	60 1/2	11 1/2	3 3/4
" 21	60 1/2	11 1/2	3 3/4
" 22	60 1/2	11 1/2	3 3/4
" 23	60 1/2	11 1/2	3 3/4
" 24	60 1/2	11 1/2	3 3/4
" 25	60 1/2	11 1/2	3 3/4
" 26	60 1/2	11 1/2	3 3/4
" 27	60 1/2	11 1/2	3 3/4
" 28	60 1/2	11 1/2	3 3/4
" 29	60 1/2	11 1/2	3 3/4
" 30	60 1/2	11 1/2	3 3/4
" 31	60 1/2	11 1/2	3 3/4

MINING STOCK QUOTATIONS

BOSTON

Allouez	50	Franklin	11 00
Atlantic	28 00	Kearns	19 00
Boston & Mont	124 00	Oreola	35 00
Butte & Boston	18 50	Quincy	112 00
Cal. & Helica	370 00	Tamarack	125 00
Centennial	9 00	Wolverine	10 00

COLORADO SPRINGS STOCKS.

Aetna	003 1/2	Ironclad	023 1/2
Alamo	02 1/2	Isabella	8 1/2
Anacosta	42	Isabella Stamp	22
Argentum Junia	27	Low	22
Bangkok-Cora Belle	02	Jack Pot	04 1/2
Bankers	04	Jefferson	08 1/2
Ben Hur	008	Keystone	06
C & N	008	Matos	0 1/2
C C & Manfou	01 1/2	Mollie Gibson	70
Creede & C C	02 1/2	Monarch	05 1/2
Croesus	01 1/2	Mount Rose	08
C C Consolidated	06 1/2	Oriole	03 1/2
Des Moines	03 1/2	Orphan Bell	11 1/2
Fannie Rawlins	10	Pharmacist	08 1/2
Favorite	10	Portland	04
Franklin	01 1/2	Peoples	01 1/2
Garfield Grasso	04	Sacramento	02 1/2
Golden Eagle	03 1/2	Specimen	03 1/2
Golden Fleece	25	Star of the West	009
Gold & Globe	15	Taylor	01
Gold Standard	02 1/2	Union Gold	14 1/2
Humboldt	03	Virginia M	02 1/2
Ingham C	15	Work	04
Inslay	003		

DENVER STOCK REPORT.

Aetna	003 1/2	Elkton	92
Alamo	02 1/2	Garfield	009
Anacosta	42	Garfield Grasso	25
Arcadia	004	Golden Fleece	25
" Consolidated	01 1/2	Goldsmith	008 1/2
Argentum Junia	27	Gold Standard	02 1/2
Bangkok-C-Bell	02	Inslay	003
Bankers	04	Ironclad	02 1/2
Ben Hur	02 1/2	Isabella	02 1/2
Bob Lee	04 1/2	Jack Pot	04 1/2
Boston & C C	01 1/2	Jefferson	08 1/2
Chimbarazo	002	Mollie Gibson	70
C & N	006	New Zealand	05 1/2
Colo. C. & M.	01 1/2	Peoples	01 1/2
C. C. Con	06 1/2	Pharmacist	08 1/2

HELENA, MONTANA

Am Den & M Co	35	Granite Mount	1 25
Bald Butte	2 25	Hope	50
Benton Group	10	Iron Mountain	40
Bi-Metallic	1 75	Moulton	30
Combination	25	Potosi	06

NEW YORK

Crown Point	19	Sierra Nevada	31
Gold & Va.	1 30	Union Con	1 75
Gold & Curry	30	Union Con	30
Hale & Norcross	80	Iron Silver	40
Homestake	90	Quicksilver	3 00
Mexican	30	Quicksilver pfd	17 05
Ontario	10	Rulwer	22
Ophir	71	Yellow Jacket	25
Plymouth	20	Deadwood	45

SAN FRANCISCO.

Alta	05	Mono	15
Belcher	18	Nevada Queen	50
Best & Belcher	72	Ophir	71
Bodie Con	55	Potosi	06
Chollar	85	Savage	38
Con. Cal. & Va.	1 30	Sierra Nevada	35
Crown Point	19	Union Con	30
Hale & Norcross	80	Utah	07
Mexican	30	Yellow Jacket	25
Gould & Curry	30	Rulwer	25

ST. LOUIS.

American Nettle	25	Elizabeth	20
Granite Mt.	1 20	Leo	1
Adams	60	Hope	1 30
Bi-Metallic	1 75	Small Hopes	90

SALT LAKE CITY

Ajax	46	Malvern	25
Alliance	25	Mammoth	1 45
Anchor	80	Mercur	7 80
Bogan	05	Morgan	22
Bonanza	05	Northern Light	30
Bull, Beck	5 40	Omaha	30
Cent. Eureka	45	Ontario	6 50
Chloride Point	27 1/2	Overland	40
Dalton	02 1/2	Richmond Anaconda	62
Daly	3 00	River	35
Doe West	6 50	Sacramento	20
Dalton & Lark	10	Silver King	14 00
Dexter	1 85	Sioux Con	1 00
Eagle	04 1/2	Sunbeam	07
East Golden Gate	01	Sunshine	35
Four Aces	08	Swansea	2 25
Galea	90	So Swansea	1 80
Geyser-Marion	1 32 1/2	Tetro	08
Horn Silver	1 75	Utah	35
Little Pittsburg	03	Utah Con	50
Lucky Bill	12 1/2		

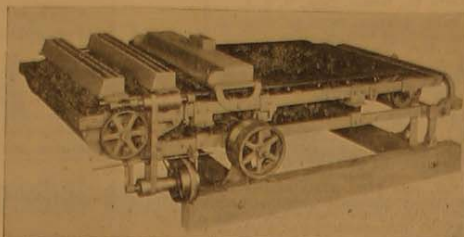
MEXICO

Name of Company	State	Price
Angustias	Guanajuato	\$ 500
Asturiana y Anexas	Zacatecas	220
Cerro Colorado	Chihuahua	10
Concepcion y Anexas	S. Luis Potosi	180
El Oro	Guanajuato	100
do, pre	"	00
Luz de Borda	Michoacan	30
do Free stock	"	30
Luz de Maravillas	Hidalgo	160
Real del Monte	"	1,100
Rosario y Anexas	Durango	50
do, pre	"	50
San Rafael del Oro	Guanajuato	90
Sta. Gertr y Anexas	Hidalgo	187
do Free Stock	"	391
Ste. Maria de la Paz	S. Luis Potosi	400
Tlaxiungo	Puebla	40
Zomelahuacan (gold)	Vera Cruz	100
Zona Min de Pozos	Guanajuato	40

Note—The above Mexican stocks are figured on the basis of Mexican silver

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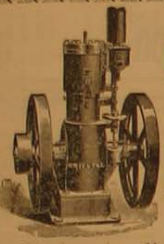
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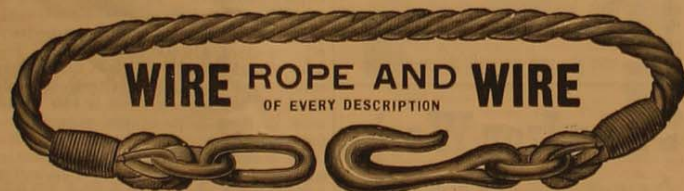
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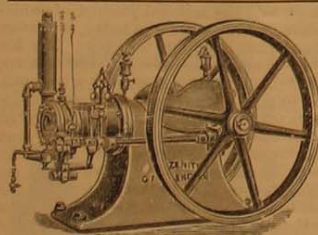
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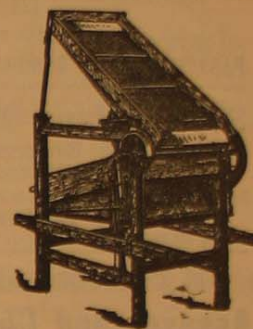
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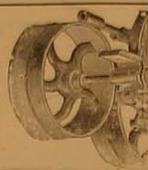
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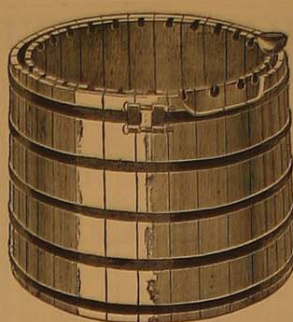
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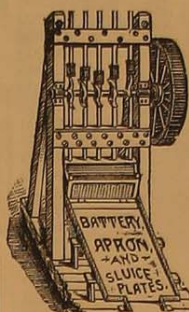
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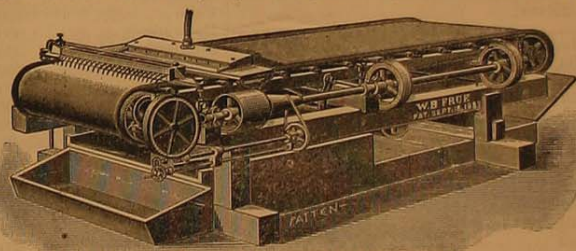
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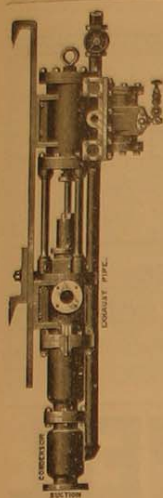
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INCORPORATED MINES PAYING DIVIDENDS.

NAMES OF MINES	LOCATION	No. of Shares	Capital Stock	Par Value	Amount of last Dividend	Date of Last Dividend	Total Amount Paid in Dividends	Kind of Mineral Produced
Aetna Cons.	California	100,000	\$ 500,000	\$ 5	\$ 10	June 1897	\$ 100,000	Q.
Adams	Colorado	1,500,000	1,500,000	5	04	October 1895	693,500	S, L, C.
Alaska, Treadwell	Alaska	200,000	5,000,000	25	10	January, 1897	3,100,000	G.
Alaska Mexican	Alaska	200,000	1,000,000	5	37½	January, 1897	191,031	G.
Anaconda	Montana	100,000	30,000,000	25	1 25	Nov. 1896	2,250,000	C.
Anchoria Leland	Colorado	600,000	600,000	1	01	May 1897	60,000	G.
Atlantic	Michigan	40,000	1,000,000	25	1 00	Feb. 1897	740,000	C.
Bald Butte	Montana	250,000	250,000	1	03	June 1896	470,500	S, G.
Bangkok C-Bell	Colorado	600,000	600,000	1	1	July 1896	107,510	S, L, C.
Big Six	Colorado	500,000	500,000	1	00½	April 1897	5,000	G, S.
Boston & Montana	Montana	150,000	3,750,000	25	3 00	Feb. 1897	5,375,000	G, C, S.
Bullion Beck and Champ	Utah	100,000	1,000,000	10	50	Mar 1897	2,465,000	G, S.
Cariboo	British Col.	800,000	800,000	1	02	Dec. 1896	125,410	G.
C. O. D.	Colorado	500,000	500,000	1	01	March 1896	25,000	G.
Calumet & Hecla	Michigan	100,000	2,500,000	25	15 00	Feb 1897	48,350,000	C.
Centennial Eureka	Utah	30,000	1,500,000	50	1 00	Mar 1897	2,010,000	S, L.
Champion	California	3,400	34,000	10	25	April 1897	278,200	G.
Consolidated, California and Virginia	Nevada	216,000	21,600,000	100	25	March 1895	3,592,800	S, G.
Coutis	Nevada	100,000	10,000,000	100	01	Feb. 1895	77,000	G.
Copper Queen Consolidated	Arizona	200,000	2,000,000	10	25	June 1895	1,910,000	C.
Crescent	Utah	24,000	600,000	25	-----	July 1897	280,000	-----
Daly	Utah	150,000	3,000,000	20	25	Mar. 1897	2,925,000	S, L.
Deadwood Terra	Dakota	200,000	5,000,000	25	50	August 1896	1,240,000	G.
De Lamar	Idaho	400,000	2,000,000	5	25	October 1896	2,250,100	S, L.
Dalton and Lark	Utah	2,500,000	2,500,000	1	00½	August 1896	87,500	S, L.
Elkhorn	Montana	200,000	1,000,000	5	06	June 1895	1,212,000	S.
Elkton Consolidated	Colorado	1,250,000	1,250,000	1	02	May 1897	266,960	G, S.
Florence	Montana	500,000	2,500,000	5	01	Jan. 1897	118,096	S.
Franklin	Michigan	40,000	1,000,000	25	2 00	January 1894	1,240,000	C.
Galena	Utah	100,000	1,000,000	10	05	Jan. 1897	71,000	G, S, L.
Garfield Grouse	Colorado	1,200,000	1,200,000	1	01	Dec. 1896	24,000	G.
Geyser-Marion	Utah	60,000	300,000	5	03	June 1897	27,000	G.
Golden Eagle	Colorado	1,000,000	1,000,000	1	01	Sep. 1896	10,000	G.
Golden Fleece	Colorado	600,000	600,000	1	01	Feb. 1897	569,179	G, S.
Gold Coin	Colorado	200,000	1,250,000	5	10	May 1897	140,000	G, S.
Gold and Globe	Colorado	750,000	750,000	1	3-10	August 1896	36,000	G.
Granite Mountain	Montana	400,000	10,000,000	25	20	July 1892	12,120,000	S.
Hecla Consolidated	Montana	30,000	1,500,000	50	50	January 1897	2,160,000	S, G, L, C.
Helena & Frisco	Idaho	500,000	2,500,000	5	04	August 1896	475,000	S, L.
Homestake	Dakota	125,000	12,500,000	100	25	Jan. 1897	6,118,750	G.
Hope	Montana	100,000	1,000,000	10	10	February 1897	662,252	S.
Horn Silver	Utah	400,000	10,000,000	25	12½	January 1896	5,080,000	S, L.
Iowa	Colorado	1,000,000	310,000	1	00½	Feb. 1897	65,000	G.
Iron Mountain	Montana	500,000	5,000,000	10	06	Nov. 1896	492,500	S.
Isabella	Colorado	2,250,000	5,000,000	100	02½	Mar. 1897	258,750	G.
Kearsarge	Michigan	40,000	1,000,000	25	00	Dec. 1895	120,000	C.
Kennedy	California	100,000	10,000,000	1	48	August 1895	1,796,000	G.
Mail of Erin	Colorado	600,000	3,000,000	5	02	November 1895	740,000	S, L, G, C.
Mayflower	California	60,000	1,200,000	20	10	December 1895	242,000	G.
Minnesota	Minnesota	165,000	16,500,000	100	1 50	July 1896	3,240,000	I.
Mollie Gibson	Colorado	1,000,000	5,000,000	5	05	January 1895	4,080,000	S.
Montana Lt	Montana	660,000	3,300,000	5	06¼	October 1895	2,890,637	G, S.
Moose	Colorado	600,000	600,000	1	01	January 1896	186,000	G.
Morning Star	California	2,400	240,000	100	7 50	May 1897	510,000	G.
Moulton	Montana	400,000	2,000,000	5	05	February 1894	460,000	S, G.
Mt. Rosa	Colorado	1,000,000	1,000,000	1	00½	Oct. 1896	30,000	G.
Mercur	Utah	200,000	5,000,000	25	12½	June 1897	725,000	G.
Mammoth	Utah	400,000	10,000,000	25	05	Nov. 1896	1,150,000	G, S, C.
Moon Anchor Gold	Colorado	600,000	600,000	1	01	July 1896	24,000	G.
New Elkhorn	Colorado	300,000	1,500,000	5	24	Sep. 1896	72,000	G.
New York & Hon. Rosario	Central A.	150,000	1,500,000	10	10	Jan. 1897	690,000	S, G.
Napa	California	100,000	700,000	7	10	Ap-il 1897	830,000	Q.
New Idria Quicksilver	California	100,000	-----	-----	10	June 1897	10,000	Q.
North Star	California	100,000	1,000,000	10	50	June 1893	450,000	G.
Nugget	Colorado	1,000,000	1,000,000	1	00½	Jan. 1895	10,000	G.
Ontario	Utah	150,000	15,000,000	100	10	June 1897	13,430,000	S, L.
Osceola	Michigan	50,000	1,250,000	25	1 00	February 1897	2,122,500	C.
Pacific Coast Borax	California	20,000	2,000,000	100	1 00	July 1893	422,500	B.
Parrot	Montana	230,000	2,300,000	10	10	June 1894	1,622,000	C.
Pennsylvania Consolidated	California	51,500	5,150,000	100	05	May 1897	12,925	-----
Plumas Eureka	California	140,600	1,406,000	10	18	October 1893	2,696,295	G.
Portland	Colorado	3,000,000	3,000,000	1	01	May 1897	1,013,000	G, S.
Quicksilver Pref.	Michigan	43,000	4,300,000	100	25	June 1891	1,823,911	Q.
Quincy	Idaho	50,000	1,250,000	25	8 00	February 1897	9,070,000	C.
Red Cloud	Colorado	200,000	1,000,000	5	10	December 1892	153,000	S, L.
Sacramento	Utah	1,000,000	1,000,000	-----	00½	March 1897	22,000	G.
Sierra Buttes	California	222,500	2,225,000	10	12	October 1893	1,559,933	G.
Silver, Mg.	New Mexico	500,000	500,000	1	4 05	December 1891	300,000	S.
Small Hopes Consolidated	Colorado	250,000	500,000	20	10	March 1896	3,275,000	S.
South Swansea	Ut-h	30,000	150,000	5	05	June 1897	45,000	S, L.
Standard	California	100,000	10,000,000	100	10	March 1897	3,773,868	G, S.
St. Joseph	Missouri	250,000	2,500,000	10	25	Dec. 1895	2,524,000	L.
Silver King	Utah	150,000	3,000,000	20	25	June 1897	1,078,500	S, L, C.
Smuggler Union	Colorado	50,000	5,000,000	100	1.00	October 1896	150,000	G, S.
Swansea	Utah	23,000	100,000	5	05	June 1897	46,500	S, L.
Tom Boy	Colorado	200,000	200,000	10	20	March 1896	410,000	G.
Tamarack	Michigan	50,000	1,250,000	25	3 00	Dec. 1896	4,770,000	C.
Trinity River	Colorado	500,000	500,000	1	-----	April 1894	37,500	G.
Union	Colorado	1,250,000	1,250,000	1	01	June 1896	73,000	S.
United Verde	Arizona	300,000	3,000,000	10	25	December 1893	562,500	C.
Utah	Utah	100,000	1,000,000	10	02	Feb. 1897	175,000	G, S.
Utah Consolidated	Utah	30,000	150,000	5	02	Sept. 1896	3,000	S, L.
Victor	Colorado	200,000	1,000,000	5	10	Mar 1897	765,000	G.
War Eagle	British Col.	500,000	500,000	1	06	October 1896	187,000	-----

S, Silver, G, Gold, L, Lead, C, Copper, Q, Quicksilver, I, Iron, B, Borax.



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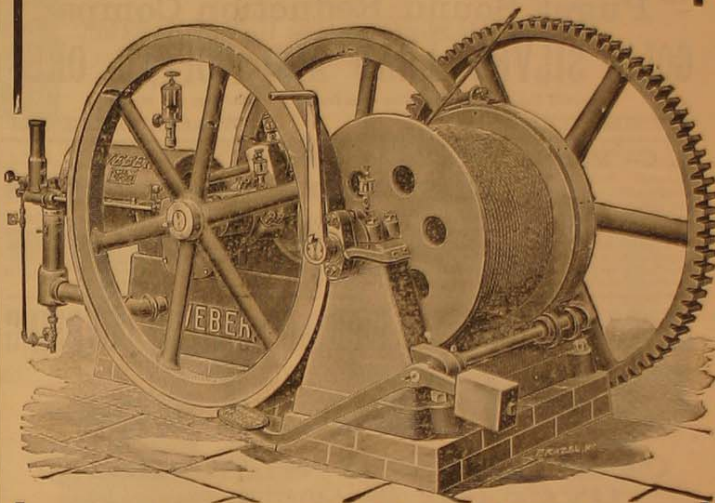
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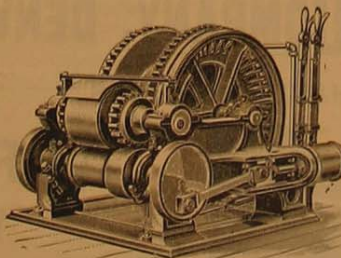
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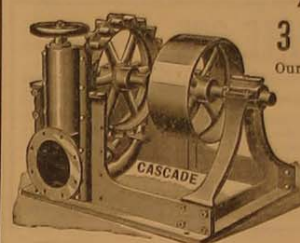
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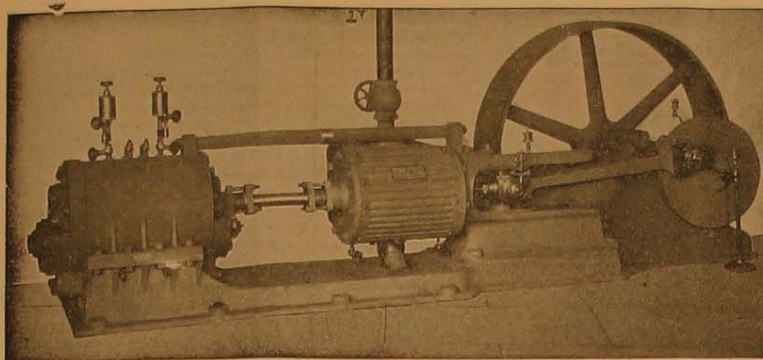
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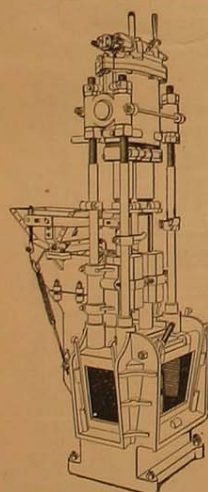
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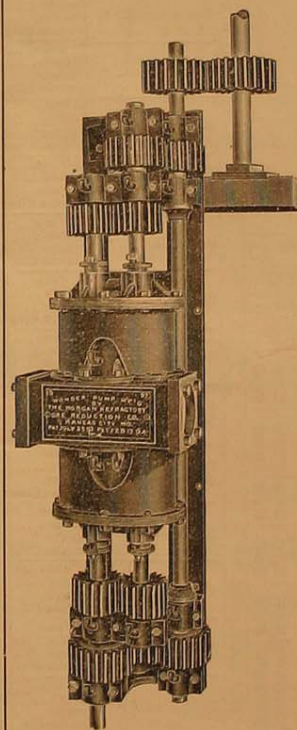
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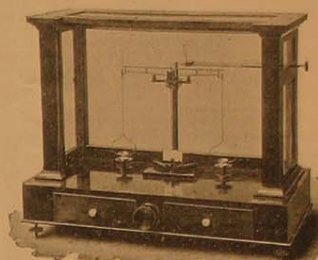


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	Denver	13 50	15 00	17 00	
Ortiz, "	Kansas City	15 50	17 00	19 00	
	El Paso	9 50	11 00	13 00	
	Pueblo	12 00	13 50	15 50	
Torres, "	Denver	13 00	14 50	16 50	
	Kansas City	14 50	16 00	18 00	
Hermosillo, "	El Paso	9 00	10 50	12 50	
	Pueblo	11 50	13 00	15 00	
	Denver	12 50	14 00	16 50	
Pesqueira, "	Kansas City	13 50	15 00	17 00	
	El Paso	8 50	10 00	12 00	
	Pueblo	10 50	12 00	14 00	
Querobabi, "	Denver	12 00	13 50	15 50	
	Kansas City	12 00	13 50	15 50	
Santa Anna, "	El Paso	8 00	9 50	11 50	
	Pueblo	10 50	12 00	14 00	
	Denver	11 50	13 00	15 00	
Magdalena, "	Kansas City	12 00	13 50	15 50	
	El Paso	7 50	9 00	11 00	
	Pueblo	10 00	11 50	13 50	
Imuris, "	Denver	11 00	12 50	14 50	
	Kansas City	11 50	13 00	15 00	
Nogales, A. T.	El Paso	6 50	8 00	10 00	
	Pueblo	9 00	10 50	12 50	
	Denver	10 00	11 50	13 50	
Calabasas, "	Kansas City	11 00	12 50	14 50	
	El Paso	6 00	7 50	9 50	
	Pueblo	8 50	10 00	12 00	
Sanford, "	Denver	9 50	11 00	13 00	
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Crittenden, "	El Paso	5 50	7 00	9 00	
	Pueblo	8 00	9 50	11 50	
	Denver	9 00	10 50	12 50	
Fairbank, "	Kansas City	10 00	11 50	13 50	
	El Paso	4 40	5 50	7 50	
	Pueblo	6 50	8 00	10 00	
Tucson, "	Denver	8 00	9 50	11 50	
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Benson, "	El Paso	4 35	5 40	7 40	
	Pueblo	6 50	8 00	10 00	
	Denver	7 50	9 00	11 00	
Steins Pass, N.M.	Kansas City	10 00	11 50	13 50	
	El Paso	3 00	4 00	5 00	
	Pueblo	5 00	6 00	7 00	
Lordsburg, "	Denver	6 00	7 00	8 00	
	Kansas City	7 00	8 00	9 00	
Silver City, "	El Paso	2 50	3 50	4 50	
	Pueblo	4 50	5 50	6 50	
	Denver	5 50	6 50	7 50	
Hudson, "	Kansas City	6 50	7 50	8 50	
	El Paso	2 40	3 40	4 40	
	Pueblo	4 40	5 40	6 40	
Deming, "	Denver	5 40	6 40	7 40	
	Kansas City	6 40	7 40	8 40	
Florida and Lake Valley, "	El Paso	2 20	3 20	4 20	
	Pueblo	4 20	5 20	6 20	
	Denver	5 20	6 20	7 20	
Nutt, "	Kansas City	6 20	7 20	8 20	
	El Paso	1 50	2 50	3 50	
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	Denver	6 50	8 00	10 00	11 20
	Kansas City	7 50	9 00	11 00	12 20
Lava, "	El Paso	2 20	2 60	3 60	5 00
	Pueblo	5 50	7 00	9 00	10 20
	Denver	6 50	8 00	10 00	11 20
	Kansas City	7 50	9 00	11 00	12 20
San Marcial, "	El Paso	2 40	2 80	3 80	5 20
	Pueblo	6 20	7 70	9 70	11 00
	Denver	7 20	8 70	10 70	12 00
	Kansas City	8 20	9 70	11 70	13 00
Carthage, "	El Paso	2 60	3 00	4 00	5 40
	Pueblo	6 40	7 90	9 90	11 20
	Denver	7 40	8 90	10 90	12 20
	Kansas City	8 40	9 90	11 90	13 20
San Antonio, "	El Paso	2 80	3 20	4 20	5 60
	Pueblo	6 60	8 10	10 10	11 40
	Denver	7 60	9 10	11 10	12 40
	Kansas City	8 60	10 10	12 10	13 40
Magdalena, "	El Paso	2 80	3 20	4 20	5 60
	Pueblo	6 60	8 10	10 10	11 40
	Denver	7 60	9 10	11 10	12 40
	Kansas City	8 60	10 10	12 10	13 40
Socorro, "	El Paso	2 60	3 00	4 00	5 40
	Pueblo	6 40	7 90	9 90	11 20
	Denver	7 40	8 90	10 90	12 20
	Kansas City	8 40	9 90	11 90	13 20
Albuquerque, "	El Paso	3 00	3 40	4 40	5 80
	Pueblo	6 80	8 30	10 30	11 60
	Denver	7 80	9 30	11 30	12 60
	Kansas City	8 80	10 30	12 30	13 60
Bernalillo, "	El Paso	3 20	3 60	4 60	6 00
	Pueblo	7 00	8 50	10 50	11 80
	Denver	8 00	9 50	11 50	12 80
	Kansas City	9 00	10 50	12 50	13 80
Wallace, "	El Paso	3 40	3 80	4 80	6 20
	Pueblo	7 20	8 70	10 70	12 00
	Denver	8 20	9 70	11 70	13 00
	Kansas City	9 20	10 70	12 70	14 00
Los Cerillos, "	El Paso	3 60	4 00	5 00	6 40
	Pueblo	7 40	8 90	10 90	12 20
	Denver	8 40	9 90	11 90	13 20
	Kansas City	9 40	10 90	12 90	14 20
Flagstaff, A. T.	El Paso	6 50	8 00	10 00	
Seligman, "	Pueblo	7 50	9 00	11 00	
	Denver	8 50	10 00	12 00	
	Kansas City	9 50	11 00	13 00	
Peach Spgs, "	El Paso	7 50	9 00	11 00	
Hackberry, "	Pueblo	8 50	10 00	12 00	
	Denver	9 50	11 00	13 00	
	Kansas City	10 50	12 00	14 00	
Kingman, "	El Paso	7 50	9 00	11 00	
	Pueblo	8 50	10 00	12 00	
	Denver	9 50	11 00	13 00	
	Kansas City	10 50	12 00	14 00	
Yucca, "	El Paso	7 50	9 00	11 00	
	Pueblo	8 50	10 00	12 00	
	Denver	9 50	11 00	13 00	
	Kansas City	10 50	12 00	14 00	
Needles, Cal.	El Paso	7 50	9 00	11 00	
	Pueblo	8 50	10 00	12 00	
	Denver	9 50	11 00	13 00	
	Kansas City	10 50	12 00	14 00	
Fenner, "	El Paso	8 25	9 75	11 75	
	Pueblo	9 25	10 75	12 75	
	Denver	10 25	11 75	13 75	
	Kansas City	11 25	12 75	14 75	
Bagdad, "	El Paso	8 50	10 00	12 00	
	Pueblo	9 50	11 00	13 00	
	Denver	10 50	12 00	14 00	
	Kansas City	11 50	13 00	15 00	
Daggett, "	El Paso	8 50	10 00	12 00	
	Pueblo	9 50	11 00	13 00	
	Denver	10 50	12 00	14 00	
	Kansas City	11 50	13 00	15 00	
Barstow, "	El Paso	9 00	10 50	12 50	
	Pueblo	10 00	11 50	13 50	
	Denver	11 00	12 50	14 50	
	Kansas City	12 00	13 50	15 50	
Kramer, "	El Paso	9 50	11 00	13 00	
	Pueblo	10 50	12 00	14 00	
	Denver	11 50	13 00	15 00	
	Kansas City	12 50	14 00	16 00	
Mojave, "	El Paso	10 00	11 50	13 50	
	Pueblo	11 00	12 50	14 50	
	Denver	12 00	13 50	15 50	
	Kansas City	13 00	14 50	16 50	

Rates on Copper or Zinc Ore to Canon City.

Taking Effect July 1st, 1891.—So far as rates on Copper or Zinc Ore are concerned, Canon City, Col., will be considered as common with Pueblo; in other words the rates shown in Tariff as applying on shipments of Ore to Pueblo, will also apply on shipments of Copper or Zinc Ore to Canon City.

In the absence of positive information as to the value of Ore, Ore Concentrates, or Base Metal, Agents will bill at rates sufficiently high to protect the Company. These rates can be corrected when evidence of actual value is produced.

The market price at destination, to be verified by assays made

by the Railroad Company, at owner's expense, will govern the value and determine the rate.

Agents must cause shippers to understand the condition upon which these rates are based, and should make their receipts read: "Rates subject to correction according to value at destination." These rates only apply on lots of ten tons or over. On lots of four tons and under ten, 20 per cent, and on lots of one ton and less than four, 40 per cent will be added to above rates. Base Metal, Copper Matte and Ore Concentrates on lots of less than one ton, will take first-class rates from the above points, except when the rate based on valuation makes it higher, that rates on small lots of high value may not be less than the rates when in lots of one ton or over as above.

Charges on Ore in car-loads must be guaranteed, and on lots less than a car-load must in all cases be prepaid.

Omaha Rates.—The Rates to Omaha, Neb., all grades, will be \$1 per ton higher than the rates to Kansas City.

Note.—All shipments of Ore and Concentrates valued not to exceed \$50 per ton must be billed at the rate for Ore and Concentrates, "Valuation over \$50 not to exceed \$100 per ton," and shipping receipt must be issued by agent at said rate. Agent at destination is authorized to correct the rate for Ore and Concentrates, "Valuation not to exceed \$50 per ton," upon presentation of properly certified smelter returns, showing that the value does not exceed \$50 per ton.

Intermediate points not named will take rates provided for next station beyond.

SOUTHERN CALIFORNIA RAILWAY.

Rate on Ore in car loads, valuation not to exceed \$50 per ton, minimum weight 24,000 lbs. Oro Grande, Cal., to Pueblo, Col., \$10.30 per ton.

Same, Victor, Cal., to Pueblo, \$10.35 per ton. Ore, car loads, when coming from the Republic of Mexico valuation not to exceed \$50 per ton; San Diego or National City to Denver, Col., and Pueblo, Col., \$12 per ton of 2,000 lbs.

Ore, valuation not to exceed \$100 per net ton and so receipted for, minimum weight 30,000 lbs. 75c per 100 lbs. to Denver and Pueblo, Col., from all points on the Southern California Railway.

ORE TARIFF.

From Points in New Mexico, Arizona and California, to
El Paso, San Francisco and Vallejo Junction.

SOUTHERN PACIFIC R. R. COMPANY.

FROM	TO	Valuation not to exceed \$50 per ton.			
		Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$50 per ton.	Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.
El Paso, Tex.	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Deming, N.M.	El Paso	2.00	2.00	2.00	2.20
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Gage, "	El Paso	2.00	2.00	2.00	2.20
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Separ, "	El Paso	\$2.50	3.00	3.00	3.00
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Lordsburg, "	El Paso	\$2.50	3.00	3.00	3.00
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Steins Pass, "	El Paso	\$2.50	3.00	3.00	3.00
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Bowie, A. T.	El Paso	\$3.00	3.60	3.60	4.40
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Willcox, "	El Paso	\$3.00	4.00	4.00	5.00
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Dragoon, "	El Paso	\$3.00	4.20	4.20	5.20
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Summit, "	El Paso	\$3.50	4.35	4.35	5.60
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Benson, "	El Paso	\$3.50	4.35	4.35	5.60
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Tucson, "	El Paso	\$4.00	5.00	5.00	6.00
	San Francisco	\$9.10	\$9.10	\$9.10	11.20
Casa Grande, "	El Paso	\$4.00	5.00	5.00	6.00
	San Francisco	\$9.10	\$9.10	\$9.10	11.20

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Yours very truly,

J. P. WOODBURY, Supt.

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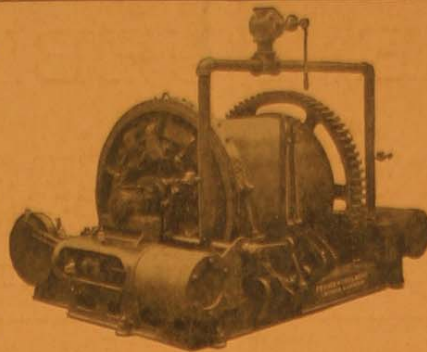
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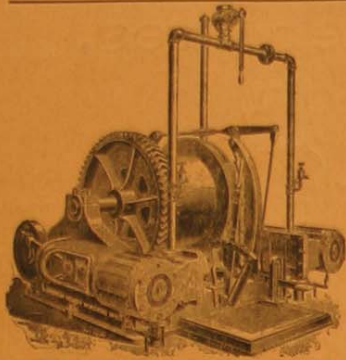
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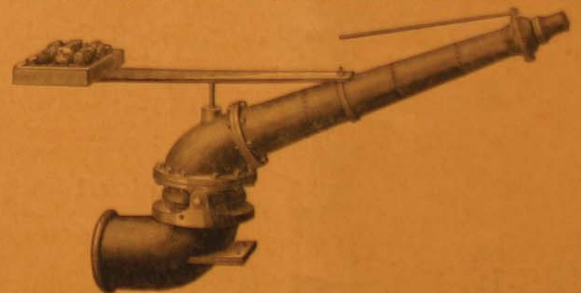
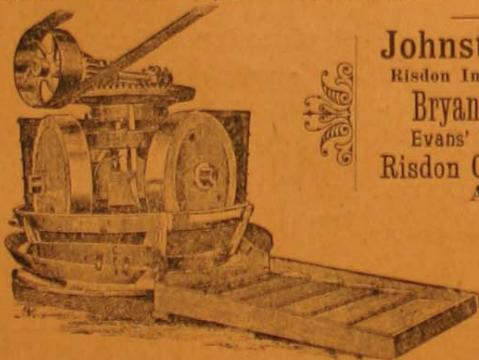
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